

OLD!

PC | SONY | SEGA | NINTENDO | SINCLAIR | SNK | ATARI | COMMODORE | COIN-OP | MOBILE

Future
BOOKAZINE

164
PAGES OF ICONIC
GAMES

retro GAMER

ANNUAL



Digital
Edition

Future

WELCOMETO retro* GAMER ANNUAL

Everyone has fond memories of their favourite games, or their first computer or console. We remember collecting Sonic's Chaos Emeralds, booting up our first Amiga game or achieving our highest ever lap time on *Super Mario Kart*. A piece of classic game music will instantly recall a time from our youth, while an image of a retro home computer will inevitably result in waves of nostalgia. With that in mind, we've gone through the last 12 issues of your favourite magazine and cherry-picked the best content for this annual. So grab a cup of tea, sit down and enjoy a selection of awesome features and fantastic interviews covering some of the industry's defining games.



retro GAMER ANNUAL

Future Publishing Ltd

Richmond House
33 Richmond Hill
Bournemouth
Dorset BH2 6EZ
☎ +44 (0) 1202 586200

Editorial

Editor **Darran Jones**
Designer **Sam Ribbits**
Editor In Chief **Jon White**
Senior Art Editor **Andy Downes**

Advertising

Media packs are available on request
Commercial Director **Clare Dove**
clare.dove@futurenet.com

International

International Licensing Director **Matt Ellis**
matt.ellis@futurenet.com

Circulation

Head of Newstrade **Tim Mathers**
01202 586200

Production

Head of Production US & UK **Mark Constance**
Production Managers **Keely Miller, Nola Cokely,**
Vivienne Calvert, Fran Twentyman
Production Project Manager **Clare Scott**
Advertising Production Manager **Joanne Crosby**
Digital Editions Controller **Jason Hudson**

Management

Managing Director **Aaron Asadi**
Editorial Director **Paul Newman**
Art & Design Director **Ross Andrews**
Head of Art & Design **Greg Whitaker**
Commercial Finance Director **Dan Jotcham**

Printed by

William Gibbons, 26 Planetary Road, Willenhall,
West Midlands, WV13 3XT

Distributed Worldwide by

Marketforce, 5 Churchill Place, Canary Wharf, London, E14 5HU.
☎ 0203 787 9001 www.marketforce.co.uk

We are committed to only using magazine paper which is derived from responsibly managed, certified forestry and chlorine-free manufacture. The paper in this magazine was sourced and produced from sustainable managed forests, conforming to strict environmental and socioeconomic standards. The manufacturing paper mill holds full FSC (Forest Stewardship Council) certification and accreditation

Disclaimer

All contents © 2017 Future Publishing Limited or published under licence. All rights reserved. No part of this magazine may be used, stored, transmitted or reproduced in any way without the prior written permission of the publisher. Future Publishing Limited (company number 2008885) is registered in England and Wales. Registered office: Quay House, The Ambury, Bath BA1 1UA. All information contained in this publication is for information only and is, as far as we are aware, correct at the time of going to press. Future cannot accept any responsibility for errors or inaccuracies in such information. You are advised to contact manufacturers and retailers directly with regard to the price of products/services referred to in this publication. Apps and websites mentioned in this publication are not under our control. We are not responsible for their contents or any other changes or updates to them. This magazine is fully independent and not affiliated in any way with the companies mentioned herein.

Retro Gamer Annual Volume Four
© 2017 Future Publishing Limited



Future is an award-winning international media group and leading digital business. We reach more than 57 million international consumers a month and create world-class content and advertising solutions for passionate consumers online, on tablet & smartphone and in print.

Future plc is a public company quoted on the London Stock Exchange (symbol: FUTR).
www.futureplc.com

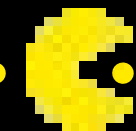
Chief executive Zillah Byng-Thorne
Non-executive chairman Peter Allen
Chief financial officer Penny Ladkin-Brand

Tel +44 (0)1225 442 244

Part of the

retro GAMER

bookazine series



retro GAMER ANNUAL

THE ULTIMATE GUIDE TO
CLASSIC VIDEOGAMING

CONTENTS

8 THE MAKING OF SUPER MARIO KART

We go behind the scenes of the iconic kart racing game that started as an *F-Zero* clone



18 ULTIMATE GUIDE: GAUNTLET II

Everything you need to know about Atari's incredible super-charged sequel

24 40 YEARS OF THE COMMODORE PET

We take a look at one of the key machines from the early Commodore range

30 ULTIMATE GUIDE: CHASE H.Q.

Find out about the many conversions of Taito's arcade hit. "Let's go Mr Driver!"

38 ZX SPECTRUM: 35 YEARS, 35 GAMES

Martyn Carroll highlights one key game for every year the Spectrum has been available

46 THE KINGS OF KONG

Wes Copeland, Steve Wiebe and others on the allure of Nintendo's classic arcade platformer

54 THE MAKING OF NEBULUS

John M. Phillips revisits his classic platform/puzzle game for the 8 and 16-bit formats

58 THE COLLECTOR'S GUIDE TO CODEMASTERS

Our extended guide highlights all the games you should collect for the popular budget range

64 TOP 20 APPLE II GAMES OF ALL TIME

Key developers, including Jordan Mechner, look back at the best games for Apple's computer

72 PC ENGINE: IMPORT ICON

Discover why NEC's diminutive console made such a big impact in the west

80 THE EVOLUTION OF POKEMON

Junichi Masuda reveals the changing history of one of Nintendo's biggest franchises

88 THE MAKING OF VIRTUA FIGHTER

Yu Suzuki explains how he helped kick-start a 3D revolution for the fighting genre

96 THE MAKING OF THE LEGEND OF ZELDA: A LINK TO THE PAST

Takashi Tezuka lifts the lid on directing Nintendo's 2D masterpiece

104 THE RISE OF THE AMIGA 500

David Pleasance and others on the astonishing success of the 16-bit home computer





114 THE MAKING OF THE ROAD RASH TRILOGY

Dan Geisler explains how he helped create Electronic Arts' popular Mega Drive series

122 THE LEGACY OF RESIDENT EVIL

Acclaimed creators of horror titles speak on the impact of Capcom's legendary game

132 THE MAKING OF STAR WARS: ROGUE SQUADRON

Members of Factor 5 and LucasArts retrieve the blueprints for the popular trilogy

140 THE DEFINITIVE HISTORY OF TOMB RAIDER

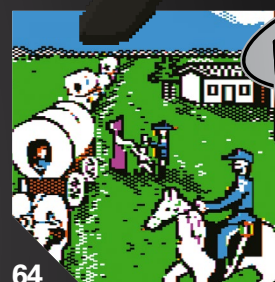
Learn about the origins of Lara Croft from the developers who crafted her adventures

154 THE MAKING OF FINAL FANTASY XII

Shinji Hashimoto on the creation of his RPG masterpiece and its recent HD update



58



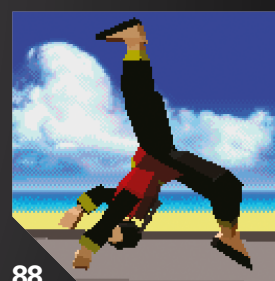
64



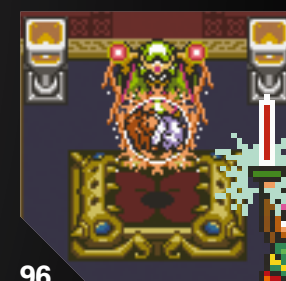
72



80



88



96



104



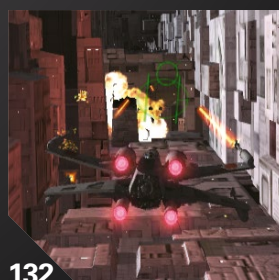
140



38



46



132



MARIO KART THE UNTOLD STORY

IN 1992, THE ULTIMATE VIDEOGAME SPINOFF WAS UNLEASHED UPON UNSUSPECTING SNES OWNERS. 25 YEARS ON, SHIGERU MIYAMOTO, HIDEKI KONNO AND TADASHI SUGIYAMA TELL US HOW IT WAS MADE. JOIN NICK THORPE ON THE STARTING GRID...





KARTING KINGS

The Nintendo all-stars that we spoke to about Super Mario Kart



SHIGERU MIYAMOTO
PRODUCER,
SUPER MARIO KART



HIDEKI KONNO
DIRECTOR,
SUPER MARIO KART



TADASHI SUGIYAMA
DIRECTOR,
SUPER MARIO KART

MARIO KART



» The Super Famicom and SNES art were marginally different from each other.



Videogame spinoffs are a tricky thing to get right. Often, it seems like someone in marketing has asked the question, “Why don’t we take [Property X] and make a [Genre Y] game out of it?” and then left the developers to solve the problem. Sometimes, the idea is sound but hampered by trying to adhere too closely to the original game’s mechanics. On other occasions, the spirit of the original property is lost in the transition to a new genre, or the developer has wandered too far from what it does best and delivered a sub-par product. But the world’s most beloved spinoff series didn’t have any of these problems, because Nintendo EAD never started off with the goal of making *Super Mario Kart*.

“Our original plan didn’t include Mario or karts. The game’s roots lie in one of the launch titles for the SNES: *F-Zero*,” director Hideki Konno and graphics artist Tadashi Sugiyama confirm to us. The futuristic racing game was a key technical showcase for the SNES, displaying the scaling and rotation capabilities of the console’s custom graphics hardware – a feature commonly known as Mode 7. It was an influential and popular game, but one that lacked multiplayer. “The game was designed for single-player gameplay

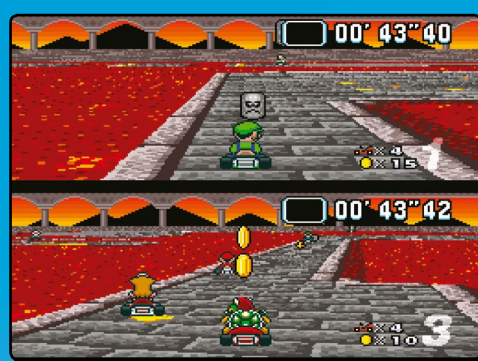
“I had absolutely no objections with enemy characters racing against rivals”

Shigeru Miyamoto

because of our focus on getting across the sense of speed and the size of the courses,” explain Konno and Sugiyama. “It was a prototype for a multiplayer version of *F-Zero* that ended up being the starting point for *Super Mario Kart*, and from there we went through a period of trial and error to find what worked.”

“You could say that Mario was added to the racing game as a result of this trial and error,” Konno and Sugiyama continue. “*F-Zero* displays the layer for the course over an area of 100 screens in order to create a feeling of speed and scale. However, because of hardware limitations, splitting the screen for multiplayer required the courses be displayed within an area no more than four TV screens wide by four screens high, i.e. 16 screens.” Getting multiplayer working was possible, albeit with some sacrifice – and, as it turns out, losing a huge chunk of the map was a sacrifice too far. “We tried creating an *F-Zero*-style circuit within that limitation, but found it too difficult to race in with an F1-type vehicle, making it impossible to create a course that could give you a feeling of speed.”

Given that high speeds were a key characteristic of *F-Zero*, it was clear that the game’s theme needed to change. “In a last-ditch attempt, we came up with what we felt was our only choice: kart racing. Karts were a great fit for these compact courses,” Konno and Sugiyama recall. The slower pace of the game certainly suited the smaller courses, although the development team would have to be inventive with their 1024x1024 pixel design space. “However, with the drivers wearing helmets and racing suits, they all



» Hazards on the track aren’t limited to those provided by other racers, as the Thwomp here proves.

STARTING GRID

Your guide to the eight racers found in Super Mario Kart

MARIO

SPECIAL ITEM: ★ RIVAL: 🍄

ACCELERATION ★★☆☆☆
TOP SPEED ★★☆☆☆
WEIGHT ★★☆☆☆
HANDLING ★★☆☆☆



PEACH

SPECIAL ITEM: 🍄 RIVAL: 🍄

ACCELERATION ★★☆☆☆
TOP SPEED ★★☆☆☆
WEIGHT ★★☆☆☆
HANDLING ★★☆☆☆



LUIGI

SPECIAL ITEM: ★ RIVAL: 🍄

ACCELERATION ★★☆☆☆
TOP SPEED ★★☆☆☆
WEIGHT ★★☆☆☆
HANDLING ★★☆☆☆



TOAD

SPECIAL ITEM: 🍄 RIVAL: 🍄

ACCELERATION ★★☆☆☆
TOP SPEED ★★☆☆☆
WEIGHT ★★☆☆☆
HANDLING ★★☆☆☆



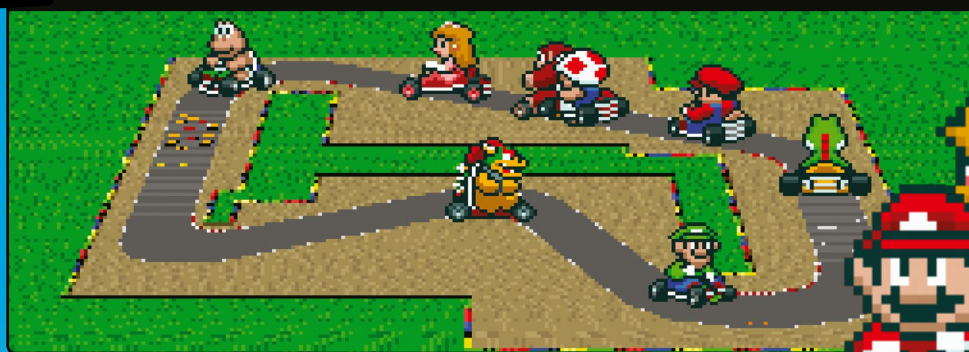


» Koopa throws caution to the wind and attempts the cross this precarious shortcut.

looked the same from behind and lacked individuality. It's hard to tell who is who, so we ran into another problem there."

The resolution to this problem proved surprisingly simple, and provided the game with some serious star power to rely upon. "We thought about what kind of character would be instantly recognisable when seen from behind, and decided to try Mario. Mario certainly is a recognisable character, even from behind, and it was instantly clear that it's him," explain Konno and Sugiyama. "For the other racers, we chose more characters from the *Mario* franchise who could also be clearly recognised from behind. This was the first step in the creation of *Super Mario Kart*. Without this hardware limitation we might have ended up with a different racing game."

Eight characters were chosen as racers. Mario and Luigi were obvious choices, as were Princess Peach, Toad and Yoshi. However, the appearance of the antagonistic characters Donkey Kong Jr., Koopa Trooper and Bowser in a friendly competitive setting was a tad unexpected. We had to ask if there was ever a concern about that. "Well the genre of the games are different and all the characters from the *Mario* series are essentially competing individually in the races, so I didn't find it strange, even if they are normally opponents,"



» Racers can be squashed flat if they've been shrunk, just like poor Toad here.

says Konno. "Here they are more like friendly rivals." Mario's character designer Shigeru Miyamoto, who served as producer on *Super Mario Kart*, elaborates on this: "The setting for *Mario* is in any case like a comic, where in each story the characters appear in different roles. Mario appearing in lots of different kinds of games is also in line with comic tradition. With this in mind, I had absolutely no objections with enemy characters racing against rivals or characters that you can control yourself." Sugiyama also chimes in on this point to add his take: "Also, despite being villains, as you say, it's still hard to actually hate these characters and I think it was a good point that users could happily use any of the characters."

With the characters established, the courses they were to race on had to be created within the tight

space restrictions. "Due to the hardware limitations at the time, we couldn't place actual 3D objects," says Sugiyama. "So we divided the ground into different types: asphalt, dirt, wood, stone, and water and created differences between them by changing the values for their resistance." A great deal of variance was achieved using this approach – nobody would mistake Vanilla Lake's ice for the mud of Choco Island, for example. "For the backgrounds we picked things that fit with the *Mario* setting," he continues. "The course difficulties were adjusted as we played them, and things like the breakable barriers were added later to make the game more thrilling."

Had Nintendo been content to put out a simple two-player racing game featuring *Mario* characters

BOWSER

SPECIAL ITEM: RIVAL:

ACCELERATION ★☆☆☆☆

TOP SPEED ★★★★★

WEIGHT ★★★★★

HANDLING ★★★★★



YOSHI

SPECIAL ITEM: RIVAL:

ACCELERATION ★★★★★

TOP SPEED ★★★★★

WEIGHT ★★★★★

HANDLING ★★★★★



KOOPA TROOPER

SPECIAL ITEM: RIVAL:

ACCELERATION ★★★★★

TOP SPEED ★★★★★

WEIGHT ★★★★★

HANDLING ★★★★★



DONKEY KONG JR.

SPECIAL ITEM: RIVAL:

ACCELERATION ★★★★★

TOP SPEED ★★★★★

WEIGHT ★★★★★

HANDLING ★★★★★



MARIO KART

TEAM PICKS

Everyone's got a favourite track in Super Mario Kart – here are the ones we particularly like...



DARRAN
RAINBOW ROAD

■ This track felt like a loving homage to the racers I used to play in my local arcade. It's certainly not the easiest of tracks and I was never amazing at it, but the feeling you get when you complete the course without falling off is mighty sweet.



NICK
DONUT PLAINS 3

■ With a little bit of practice, this course will let you unleash your inner scumbag – which is exactly why I love it. Mastery of mushrooms will allow you to hop over the walls, making for huge sneaky shortcuts that will keep you ahead of the pack.



DREW
BOWSER'S CASTLE 2

■ I always felt a degree of trepidation when navigating Bowser's Castle. Maybe it was the Thwomps, and the fact that this was the course that me and my brother would always use in our furious head-to-heads. It's a true test of your karting mettle.



SAM
KOOPA BEACH 1

■ I was going to come boldly marching in with Battle Course 1 but unfortunately that parade was briskly cancelled due to rain – courtesy of Darran. I guess I'll go speeding through the shimmering, shallow waters of Koopa Beach while I throw a stroop. Hmph.



► and courses, that product might have been considered good or even great. Once the decision was made to move away from straight racing, though, the team just kept going by adding more elements from the *Mario* platform games. For a start, collectable coins were placed on the course, which would speed up your kart. "This was an idea to add depth to the game. I remember that our boss, Mr Miyamoto, was rather focused on this," says Konno, and it's a point that Miyamoto confirms. "This is a feature that wouldn't be possible in a normal racing game. It seemed like it would be fun to actually place them on the course," he recalls. "I remember that we also made it so you could jump because this was a feature that couldn't be missing from a *Mario* game.

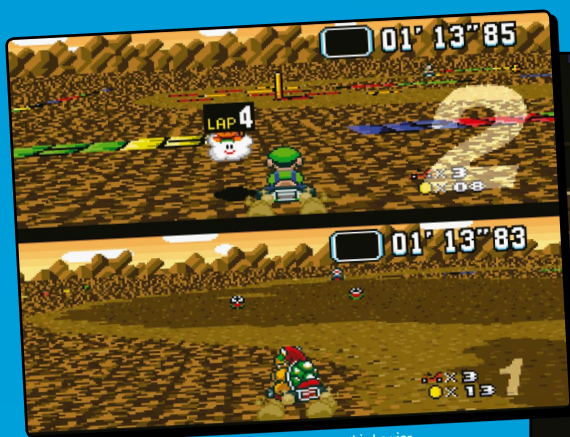
However, the game's defining feature would be the addition of power-up items, which could not only enhance your regular racing attributes such as speed, but also be used to attack other players. "When we decided that we would be making *Mario Kart* as a racing game, I thought that we shouldn't make a normal car-racing game, but instead create something based around the fun of competing for position, using karts as the medium," says Miyamoto. "It was a natural development that we would use items so that players who aren't as good could still have a chance to win, or that players who were behind could have something to give them a helping hand."

"The first item we made in the prototype was oil, which became the Banana," Konno and Sugiyama add. "We created items making sure they would fit with the *Mario* setting. In order to add offensive, defensive and unique elements to the gameplay while making sure these remained balanced, we added items with a *Mario*-esque design, such as Shells for attacking, Stars for invincibility and Ghosts for stealing other items, all while still prioritising the game processing." Nine items were created in total, each



» The map on the bottom half of the screen never lets you forget how close your opposition was...





» You'll need to be observant to spot some shortcuts – this barrier gap is practically invisible from afar.

thematically in tune with the *Mario* setting – a feature that rival karting games with less well-developed settings would seek to imitate in the future, usually to less success.

The effect of adding items to the game was completely transformative. "Attacking and defending with the items in the game is probably the feature most associated with *Mario Kart*," say Konno and Sugiyama. Our memories of hundreds of Shell attacks and carelessly-hit Banana peels, along with the inevitable rage brought about by such incidents, prove that point perfectly. "Before this game was completed we went through thousands of tests to balance the items. It was really exciting during the test plays when we would win or lose thanks to the effects of the items," he adds with a laugh.

In fact, if you've ever had a strong reaction to *Mario Kart*, it's likely that the development team has shared it. "I really played the game a lot during the adjustment and debug phases of the development. Because of the strong competitive gameplay, once I started test playing I would get excited and start shouting out while I played," Konno elaborates. "I just couldn't help it because of the randomness and potential for making huge comebacks. It's frustrating to lose even if it's just part of debugging, so I would keep playing... I mean test playing over and over," he laughs. "I may have been a bit distracting for the development teams working on other projects."

That potential for huge comebacks wasn't added by chance, either. "I'm not very good at racing games so, to give me a chance to win, I adjusted the item chances so that you'd get more powerful items the further back in the pack you were," confirms



» Peach takes out Toad with a well-timed Red Shell, but he's got one of his own in stock...



» Getting hit won't just slow you down, it'll cause you to lose coins, lowering your top speed.

“Once I started test playing I would get excited and start shouting out while I played”

Hidaki Konno

Sugiyama. "Because of this, even I could make more sudden-comeback victories, meaning I could play against even the skilled players." This proved to be a huge boost to the longevity of the game – multiplayer gameplay was made friendly to newcomers, as although there was a definite gap between the performance of the best and worst players, there was no guarantee that superior course knowledge and racing chops would result in victory every time. Everyone from your little brother to your grandma could play it and have a half-decent shot at victory.



Of course, if they didn't win races, there was also a Battle Mode to allow them to take out their frustrations on you. "Battle Mode was an idea that came up while we were making the racing mode. It wasn't part of the original plan," say Konno and Sugiyama. "The competitive gameplay has strong shooter elements, and as we were experimenting with lots of different things, we found this fun to play, and better than we expected, so we decided to include it," explain the developers. "I wanted to create it as a game that works properly with two players. These players could then battle against each other just like in *Mario Bros.*," adds Miyamoto, referring to the original 1983 arcade game.

Everything made sense in multiplayer, but the single-player experience exhibited a couple of oddities. The first was that even the single-player racing employs the same split-screen view of the action as



» Without being able to use 3D objects, Nintendo had to get creative with jumps to pull off crossover tracks.

the multiplayer mode. "The core of this game is the two-player multiplayer split-screen mode which we managed to achieve," explain Konno and Sugiyama. "We developed the game so that it could make use of a complete two-player competitive game system. The full map and rear-view mirror in the bottom half of the screen in single player were also extensions of that system. These features were achieved using camera angles and scaling adjustments. You could say it's the result of using the features efficiently."

The other oddity was in the use of items. While your racer would receive random items, CPU-controlled racers would only ever use their own fixed items, some of which were unavailable to players. "We

MARIO KART

HIT STOP

Mario Kart, and kart racers in general, just wouldn't be the same without the ability to attack your fellow racers or close the gap with a boost. We take a look at the items that were on offer in 1992...



MUSHROOM

■ This item gives you a brief burst of speed, and is commonly handed out to racers that are falling behind the pack. Use it to cover rough terrain for a handy shortcut!

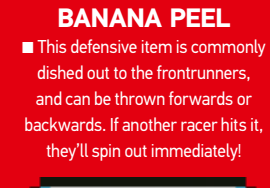
STAR

■ If you're struggling to keep up, you may receive this rare item. It both temporarily boosts your speed and enables you to attack other racers by ramming them.



FEATHER

■ Using the feather will allow for a super high jump that creates major shortcut opportunities. These are most commonly found in the Ghost Valley circuits.



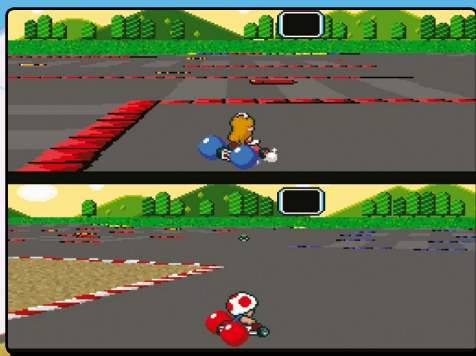
BANANA PEEL

■ This defensive item is commonly dished out to the frontrunners, and can be thrown forwards or backwards. If another racer hits it, they'll spin out immediately!



► wanted to give each character some personality. By giving the CPU racers some individuality it adds something special to the single-player mode, expanding the gameplay and making it more fun," explains Konno. "At the same time, with the hardware limitations and technical abilities of the time, it was difficult to implement the kind of logic that would allow CPU racers to use items well," he continues. "So we racked our brains about how we could make the game fun, and this was the result. In later titles we made it so that the CPU racers could also use the normal items properly throughout the game."

When *Super Mario Kart* was finished in 1992, the development team was pleased with having come up with a creative solution to a hard technical limitation. "Looking from the perspective of how to create *F-Zero*-style gameplay within such a small area, it seemed a huge challenge from both a planning and technical sense," says Konno. "We were able to overcome the technical problem by using karts. Instead of thinking conservatively and continuing to struggle with the problems, we came to a positive outcome by dramatically changing the gameplay." Despite this, the team had no idea of the success that it would go



“We were also playing the game as we were making it, so I knew it was fun”

Tadashi Sugiyama

on to achieve. "We were also playing the game as we were making it, so I knew it was fun, but I didn't imagine that users would actually like it that much," says Sugiyama.

Like it they did, though – in a 92% review in *Nintendo Magazine System*, Jaz Rignall noted the two-player racer as "fast, furious and highly addictive racing action – the best yet seen on the SNES". *N-Force* awarded it 88%, with Nick Roberts noting that "with a few mates the game bursts into life", while *Super Play* offered 94%, calling battle mode "simply the best two-player game ever". In America, reviewers were similarly taken with the game. *GamePro* offered it a full 5/5 Fun Factor rating, while the four reviewers from *Electronic Gaming Monthly* offered it two 9/10 and two 8/10 scores, calling it "the best driving game to come along for some time".

Players took notice of this praise and picked up the game in their droves, with more players catching on to the game through playing with friends. The game eventually sold a massive 8.76 million copies, placing it behind only *Super Mario World* and *Donkey Kong Country* as the third-highest-selling SNES game as all time, comfortably ahead of the fourth-placed *Street Fighter II* by over 2 million copies. Despite being so common, demand for *Super Mario Kart* is still very high today amongst SNES collectors – you'll be lucky to find a loose PAL cartridge on eBay for less than £20, and boxed copies naturally sell for more.

When asked why he thinks *Super Mario Kart* was so successful, Konno is quick to point to the multiplayer appeal of the game. "I think maybe lots of people played it as a kind of 'competitive communication





GREEN SHELL

■ Once fired, this projectile weapon will continue in a straight path until it hits a wall, at which point it'll rebound off. It's a key item for experienced racers with deadly aim.

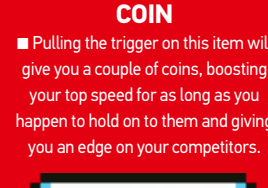
RED SHELL

■ Hitting a wall will stop your Red Shell, but if you fired it at the right time it won't do that, because Red Shells home in on nearby racers for a deadly strike.



BOO

■ Using the Boo will give you a ghostly countenance, turning you invisible and allowing you to pass through other racers – but stealing your opponent's item is the best bit.



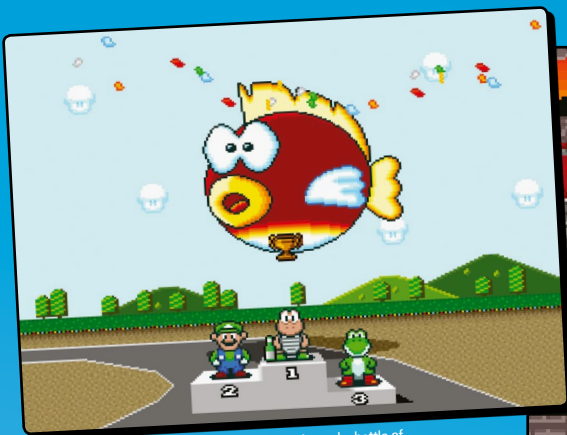
COIN

■ Pulling the trigger on this item will give you a couple of coins, boosting your top speed for as long as you happen to hold on to them and giving you an edge on your competitors.



LIGHTNING

■ This exceptionally uncommon item causes huge commotion, shrinking enemy racers except for the user. From there, they're slow and easy to squash with your wheels.

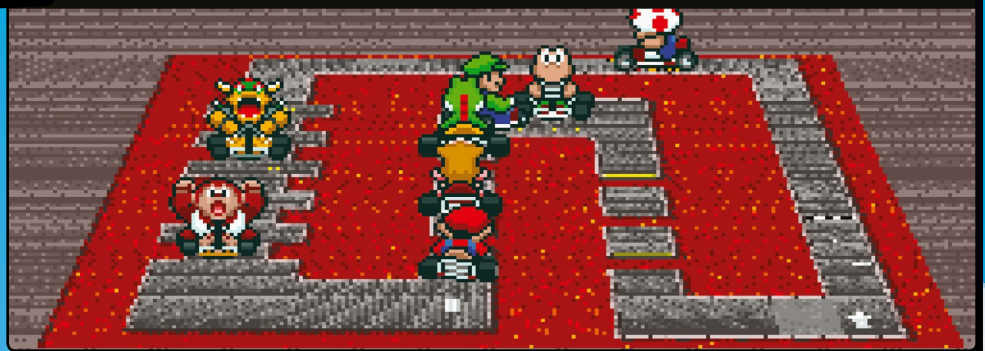


» The reward for a well-earned victory is a trophy and a bottle of... what do Koopas drink?

tool' – a way to connect with others though multiplayer – back before network multiplayer was popular, and got really into the game, playing it over a long time, including the parts like time trials that can be played over and over."

While other companies might have been tempted to cash in on the success of *Super Mario Kart* with a quick sequel, Nintendo exhibited great restraint with the series – in part because the original game was already pushing the boundaries of what was possible on the SNES. The first sequel to the 16-bit original wasn't created until 1996, when *Mario Kart 64* could take advantage of new technology to radically alter track design. This sequel proved that the original was no one-hit wonder, and many more followed – although never more than one per hardware generation, ensuring that the series stays special. With eight main games having been made, the *Mario Kart* series stands at over 100 million sales.

With such a history of success behind the *Mario Kart* series, we're keen to know how Nintendo tries to maintain the legacy of the original when creating the sequels. For Sugiyama, there's one key ingredient. "Mario Kart is not Mario Kart without the items. The opportunities that come from using the items mean that both skilled and unskilled players can play this game together," he says. "A key characteristic of *Mario Kart* is how it's often the case that you can't win just with your driving skills alone, with the races being



» Sliding around corners is a key skill for any *Super Mario Kart* player to master.

very close as everyone does everything they can to get over the finish line first." Although he hasn't been hands-on with the series since 2003's *Mario Kart: Double Dash!!*, it's clear to see that the designers of subsequent games agree with his philosophy of bringing players of disparate skill levels together.

"We aimed to create a game that's fun to play with family, friends, with everyone," concurs Konno, who has remained involved with the series right through to *Mario Kart 8 Deluxe*. "We tried to design the game so everyone could enjoy the thrill of driving, and everyone could have a chance to win, but playing it a lot will still put you on top. The first *Mario Kart* title had split-screen multiplayer, and with Nintendo DS it became possible to play with eight players over wireless communication, and with people from across the world online. This is the most important element that's been carried over from the concepts of the original *Mario Kart* game."



MARIO KART

TIMELINE ATTACK

Here's how the legacy of Super Mario Kart unfolded over the 25 years since its launch...

MARIO KART 64

N64, 1996

■ The first sequel to *Super Mario Kart* used the N64's power to move the series into full 3D, allowing for more dynamic course designs. It also bumped the player count from two to four and introduced the dreaded Blue Shell.



MARIO KART SUPER CIRCUIT

GAME BOY ADVANCE, 2001

■ Like the SNES original, the first handheld *Mario Kart* used Mode-7-style flat, rotating tracks. It also included the SNES courses as unlockable extras, combining with the game's 20 brand-new tracks for a mammoth roster of 40.

MARIO KART: DOUBLE DASH!!

GAMECUBE, 2003

■ This experimental title required players to pick two racers which could be freely swapped during the race, and karts were also chosen separately. Special weapons for each racer were also included, for regular players as well as the CPU.



MARIO KART ARCADE GP 2

ARCADE, 2007

■ This is more of an update than a full-blown sequel, featuring the original game's content as well as new items, racers, tracks and a somewhat irritating colour commentator. Unlike the original, export models allowed players to use magnetic memory cards.

MARIO KART DS

DS, 2005

■ The second handheld *Mario Kart* game was Nintendo's big step into the world of online gaming, offering friends the chance to play against one another without bundling onto a sofa together. The inclusion of retro tracks was also made into a permanent fixture here.



MARIO KART ARCADE GP

ARCADE, 2005

■ The first coin-op instalment in the series was developed by Namco and included Pac-Man as a special guest racer. A ridiculous 93 items are included, and for the first time since the original, on-track coins make their return.

MARIO KART WII

WII, 2008

■ Races were bumped up to 12 participants here, with widened tracks to accommodate the added competition. For the first time, players could choose to use motorbikes instead of karts, and motion controls mimicking the use of a steering wheel were added.



MARIO KART 7

3DS, 2011

■ Codeveloped by Retro Studios and Nintendo EAD, this game returned coins to the main series after a lengthy absence, and added underwater and gliding sections. It was also possible to build your kart from three main components – body, wheels and glider.



MARIO KART ARCADE GP DX

ARCADE, 2013

■ This major overhaul of the *Mario Kart Arcade GP* series adds heavy modifications to existing track layouts, including the addition of underwater and gliding sections. It's also still being updated today, and can be found in Western arcades.



MARIO KART 8 DELUXE

SWITCH, 2017

■ This enhanced version of *Mario Kart 8* includes all the Wii U version's DLC, a revamped Battle Mode with new courses including a *Splatoon*-themed arena, new characters and the ability to hold two items at once. Visuals are also upgraded to 1080p.



MARIO KART 8

WII U, 2014

■ The first *Mario Kart* of the HD era adds anti-gravity sections, allowing for impossible twists and loops. Bikes make their return and ATVs debut, while DLC adds representation for other Nintendo properties including *F-Zero*, *Zelda*, *Animal Crossing* and *Excitebike*.

► *Super Mario Kart* wasn't just critically and commercially popular, it was influential. The kart racing formula has been copied and cloned a hundred times over by all manner of competitors, from originals like *Speed Freak* to crossovers like *Konami Krazy Racers*, as well as mascot-centric games starring Pac-Man, Bomberman, Crash Bandicoot and inevitably Sonic. However, very few have ever come close to the heights of the *Mario Kart* series – it's hard to replicate the appeal of the Mushroom Kingdom, the precise balance of items that keeps each race open, and the refined handling model that underpins *Mario Kart*.

It can certainly be argued that the *Mario Kart* series is just as beloved as the overall franchise that spawned it. What's more, it's perhaps even more valuable to Nintendo from a financial perspective. The games sell in huge numbers, and in recent years these have even eclipsed those of the acclaimed platform games – *Mario Kart Wii* sold 36.83 million copies, almost three times as many as *Super Mario Galaxy* (no slouch, at 12.72 million), and *Mario Kart 8* was the bestselling Wii U game, beating the second-placed *New Super Mario Bros U* by over 2.5 million copies.

With all that in mind, it's no exaggeration to say that *Super Mario Kart* is the most important spinoff game of all time, and nothing else even comes close. How does this feel for the developers? "I'm extremely happy, and deeply grateful that *Mario Kart* has become the series it is today, and has continued to be loved by users for so long," says Sugiyama. "I think it's thanks to the efforts of the staff, who for each new instalment work to implement new ideas and make each game feel fresh so users don't get tired of them. I hope you'll continue to look forward to new *Mario Kart* games."

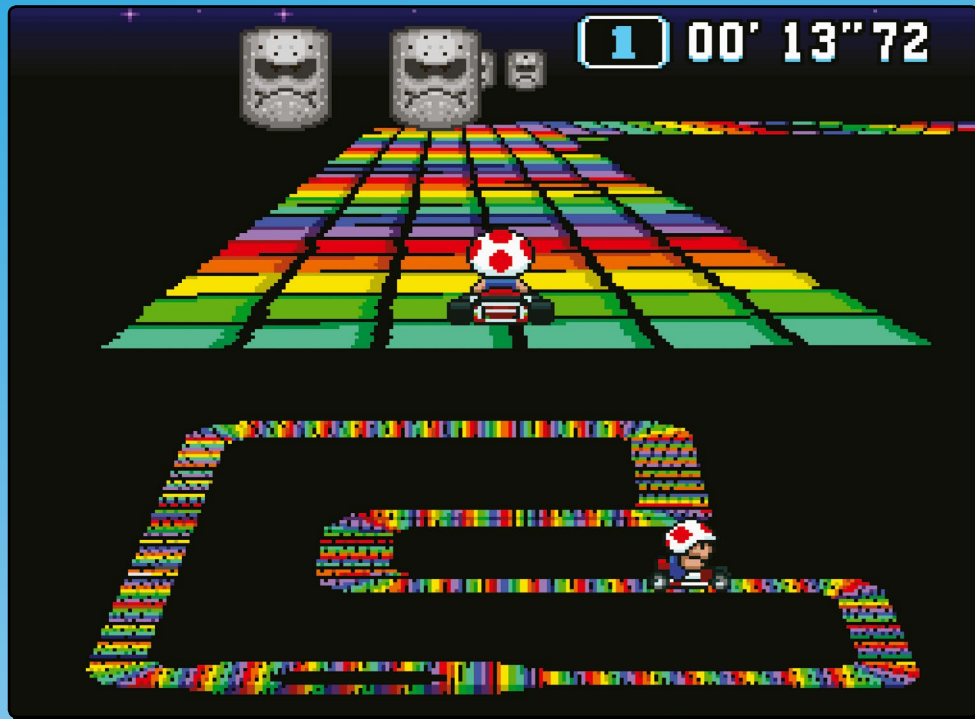


» All sorts of corner-cutting shenanigans are possible with use of the feather.

"I'm extremely happy and proud that so many people have enjoyed the game and continue to play it for so long," says Konno. "*Mario Kart* became a series of its own, where you can glide through the sky or race underwater, and in the latest instalment you can even control gravity! I'm sure more unique experiences will keep being introduced to the *Mario Kart* series so users can continue playing for years to come."

We have no doubt that players will keep coming back – they've embraced *Mario Kart* as an evergreen series. It has managed to transcend the changing fashions of the last 25 years, not to mention the varying fortunes of Nintendo's consoles, because stealing first place with a red shell feels bloody brilliant. That simple truth means that *Super Mario Kart* and its successors will always have an audience. *

Special thanks to our interviewees for answering our questions, and to Kalpesh Tailor and Emma Bounce for making this article possible.



» There's a reason Rainbow Road is the last track in the game, it's the most challenging one you'll face.



BATTLING BACK

How *Super Mario Kart* is influencing *Mario Kart 8 Deluxe* on Switch

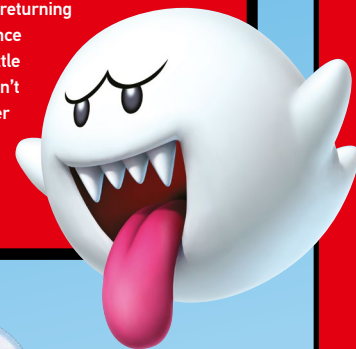


» The DNA from the original *Super Mario Kart* is still clear in the franchise's most recent outing.

Sometimes, you don't know what you have until it's gone – and that's certainly true for many elements of the original *Super Mario Kart*, which have come and gone over the years. Character-specific items and collectable coins were both omitted from *Mario Kart 64* but later returned to the series, and *Mario Kart 8 Deluxe* is bringing back more SNES-era features that have been missing as of late.

With the original Wii U version of *Mario Kart 8*, the biggest complaint that many had was the omission of the classic Battle Mode, a feature which originated on the SNES. Instead of being able to roam around specially-designed arenas that encouraged carnage and interaction, the game featured battles on regular racing tracks, a compromise which satisfied few. The good news is that SNES-style battling is back in *Mario Kart 8 Deluxe*, and a variety of retro arenas are making their return along with it, including the SNES Battle Course 1.

That's not the only returning feature, either. While Bandai Namco's arcade games have featured the Boo as an item consistently, Nintendo's *Mario Kart* games haven't done so since *Mario Kart DS*, but it's back for *Mario Kart 8 Deluxe*. Also returning is the feather, not seen since *Super Mario Kart*. This battle mode exclusive item doesn't just allow you to jump over enemy shells and banana skins – at close range it'll also let you steal another racer's balloons!



Demon



Lobber



Magic Potion



Death



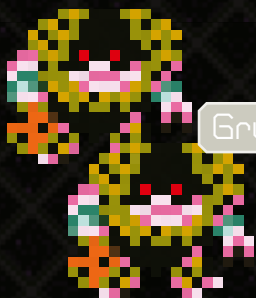
Elf



Ghost



Grunt



Wizard



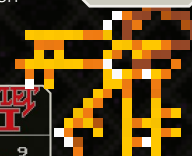
Food



IT



Keys



GAUNTLET II

Elf needs food badly, again. Warrior is about to die, once more. But was Gauntlet II really just a lazy rerun of the original game? Martyn Carroll sets off to explore the sequel's hidden depths

Precisely zero people were surprised when Atari Games released *Gauntlet II* in August 1986, less than a year after the first game debuted. The original *Gauntlet* was, after all, a smash-hit success that out-earned every other coin-op in the arcade. This was not mere happenstance – *Gauntlet* was specifically engineered to make as much money as possible.

The game's project leader, Ed Logg, was trying to work out a way of increasing earnings at a time when players in the US were not prepared to spend more than a quarter on a single credit. And when they deposited that quarter, the game was engaged for two minutes or however long,



» Bringing new meaning to the term 'haunted house'.

Treasure

ULTIMATE GUIDE: GAUNTLET II

GAUNTLET II

Dragon



Super Sorcerer



Mugger



Amulet



Valkyrie



» Force fields and stun tiles were two new elements, and they were introduced early on in the game.



» All geek dreams are realised as four wizards team up to slay a dangerous dragon.

Thief



Warrior



during which time a crowd might gather but they would have to wait to play. Ed's eureka moment was creating a game where four players could play simultaneously. They could join in or drop out at will, and by inserting extra coins they could prolong their playing time. Four players effectively meant four times the earning potential of each machine. Of course, this gambit would have backfired hilariously had *Gauntlet* been a terrible game that no-one wanted to play. But thanks to a dollop of Dandy, a sprinkle of *D&D* and a good amount of Atari arcade expertise, the game was a genuinely fantastic, action-packed, four-player dungeon-crawler. *Gauntlet* was the hot coin-op of 1985.

The game remained an important property for Atari throughout the following year. Numerous revisions were issued in the form of EPROM updates that fixed bugs and tweaked gameplay. A later revision also addressed the issue where a skilled player could survive almost indefinitely on a single credit (which was not good for profits). A 'proper' version 2.0 was always in the works, however, and according to Bob Flanagan, who designed and programmed the *Gauntlet* games alongside Ed Logg, it certainly wasn't a rush job despite it arriving so soon after the original. "We spent about ten months coding

Acid Puddle



DEVELOPER Q&A

Richard Costello was responsible for the ST and Amiga versions

How did the *Gauntlet II* conversion come about?

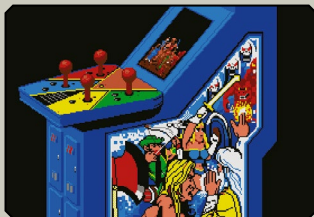
I was working as an in-house programmer at Gremlin Birmingham, which was part owned by Geoff Brown of US Gold. For Gremlin I was working on research and development for the Atari ST. The ST version of *Gauntlet* had been outsourced because at the time Geoff didn't have any in-house 16-bit resource, so I volunteered to code *Gauntlet II* in my spare time for US Gold whilst I worked for Gremlin during office hours.

The ST version of *Gauntlet* looked good but suffered from choppy character movement and scrolling. Was this something you specifically tried to resolve with *Gauntlet II*?

There were two problems with the Atari ST *Gauntlet*. Firstly, the programmer tried to replicate the arcade machine graphically by using 24x24 pixel sprites and 24x24 pixel background tiles, and secondly, he was a PC programmer, used to x86 and primarily writing in C rather than pure assembler. The above worked on the PC because it had a byte-per-pixel screen mode, but with the ST each set of 16 pixels on the screen were represented by eight interleaved bytes, which meant accessing the screen was more complex and time consuming. To get the frame-rate and playability the graphics needed to be adjusted to a more optimum size for the ST's hardware, namely 16x16 pixel sprites on a 16x16 pixel tile background. Plus I coded everything in 68000. The smaller graphics and optimised format meant I could draw the scrolling, tiled background with up to 128 foreground sprites at 25Hz.

Did you have the coin-op?

We did have the machine in the office, and we could enter a 'system check'



» [Atari ST] The 16-bit versions opened with a sequence featuring an animated coin-op cab.

mode which would display the contents of memory on the screen so Kev Bulmer, the artist, could review the frames of the characters – however, he still had to redraw all of them. Tony Porter's editor on the Spectrum was used to generate the level data – I just wrote the 68K interpreter to take this data and present the right stuff on the ST's screen.

Did including support for four-players, via the printer port, cause any development headaches?

I actually invented the theory and the wiring for the connector. It was a simple idea because back then the printer port was just a parallel interface (8-bit port with a couple of bits for handshaking) so with five switches per controller (up, down, left, right, fire) you just needed ten bits for another two users. I was amazed at how quickly my suggestion turned into a few thousand connectors appearing in the CentreSoft warehouse.

Overall, how pleased were you with your finished versions?

I was more than happy with them. I used to enjoy doing coin-op conversions because the specification was set in concrete before a line of code was written, so no moving goal posts. From a coding standpoint it was my second favourite project behind *Mortal Kombat II* for the Amiga.



» Getting too close to a dragon was not overly recommended.

► *Gauntlet II*, he says, "which was less than the 12-16 months for *Gauntlet*, although a lot of that was hardware, the maze editor and support."

As you'd imagine, the sequel was produced purely to capitalise on the continued popularity of the original. "Earnings were strong and there was determined to be a market for a new version. *Gauntlet II* was simply the next product, intended to have new levels, new gameplay, and most importantly the ability to have any character at any position." As Bob states, a key feature was that players could now select any character they wanted, whereas in the original if a character was already in play they could not be chosen. It was observed that some players would not join in if Warrior was already taken, for example, or if the Valkyrie was the only available character, so this was mainly done to remove another 'block' to playing the game. But Bob is adamant on the



» Level 6 introduced one of the more perplexing features – invisible walls!

CONVERSION CAPERS

Just how faithful were the home versions to the Atari coin-op?



ZX SPECTRUM

■ The same team responsible for the Z80 *Gauntlet* returned for the sequel. Most of the arcade features were included and the game played perfectly well, despite the lack of smoothness due to character scrolling.



COMMODORE 64

■ The original C64 version of *Gauntlet* was solid, yet it suffered from some bugs. The sequel was more polished but ran at a slower pace than the original. The result was a dungeon crawl in the most literal sense.



AMSTRAD CPC

■ This was the pick of the 8-bit home computer versions, as it featured the detail of the C64 release while maintaining the speed of the Spectrum game. Some decent music and audio effects rounded off a great conversion.



ATARI ST

■ Self-billed as, "The most authentic simulation yet from an arcade machine," and for once that was pretty accurate. It featured all of the coin-op's gameplay elements along with the digitised speech and support for four-player co-op.



AMIGA

■ The original *Gauntlet* never made it to the Amiga, so expectations were high for the sequel and it didn't disappoint. It was based on the ST version but in this was no bad thing. The four-player option was carried over, too.



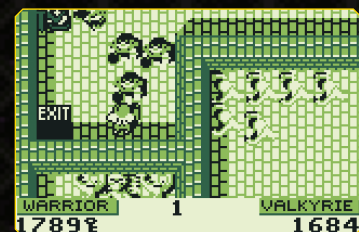
PC/DOS

■ The PC release was based on the ST and Amiga versions and the result was similar in terms of look and feel. It also included an alternative version with a smaller game screen for PC owners with slower processors.



NES

■ Arriving late (in 1990) but worth the wait, the NES version squeezed the arcade game onto a cartridge. It featured all of the enemies, collectables and secrets, plus lots of digitised speech and even four-player support.



GAME BOY

■ Trying to replicate sprawling, enemy-filled dungeons on the Game Boy's tiny screen was a tough ask, but the end result actually worked rather well – particularly in two-player mode using the Game Link feature.

"I volunteered to code *Gauntlet II* in my spare time for US Gold whilst I worked for Gremlin"

Richard Costello

position that the sequel wasn't solely about boosting takings. "There was a definite desire to evolve the gameplay experience," he reveals, "with the ability to have four wizards instead of one, for instance, and the dragon, the secret rooms, rotated and flipped mazes, 'IT' gameplay, power-ups, and many other game extensions."

The sequel did introduce a lot of elements. There were new amulets that bestowed the player with temporary abilities, including reflecting shots (you could bounce shots off walls), transportability (you were able to move through walls and other objects) and repulsiveness (enemies would be repelled away from you). New maze features were also introduced, including intermittent force fields that you had to dash past, stun tiles that briefly incapacitated players, and trap tiles that would remove walls that were often holding Death and other nasties at bay. Some walls could be shot or shoved, others were invisible or would move on their own. Sometimes exits would move, sometimes exits were fake. All this resulted in levels feeling more interactive and 'alive'.



» Treasure rooms returned, and, once again, you had to grab as much loot as you could before the timer ran out.



» Reflecting shots were very useful, enabling you to bounce projectiles off walls to get the drop on enemies.

► The original dungeon dwellers returned along with some new monsters. The most inventive was 'IT', a swirling apparition that would curse players on contact. Once cursed, enemies would swarm towards you, and the only way to remove the curse was to pass it onto another player, resulting in madcap bouts of dungeon tag. Finally there was the dragon, which was the largest enemy and, in some ways, also the biggest disappointment. Dragons would lurk in various levels and often guard the exit, but anyone hoping to encounter a massive, fire-breathing beast on, say, level 100 would be disappointed. The sequel followed the design of the original where the game continued ad infinitum and there was no final dungeon (unlike the NES

"I did not use any of the original C64 code even though I had access to it all"

Stuart Gregg



» In North America accessing and raiding a secret room gave players a code which they could use to win prizes from Atari.

version of the original *Gauntlet* which *did* end at level 100 with a boss battle against a three-headed dragon, no less).

There was no end game," confirms Bob. "The idea for the *Gauntlet* series was infinite play. The dragon and the treasure rooms were meant to help with shorter-term goals and completion feelings for the player. Many players felt that there were an infinite number of mazes and possibly that they were generated – that was an authoring cheat from us." For the record, there were actually 105 standard levels, plus 11 treasure rooms and a couple of secret rooms, making 118 unique levels in total. Each level could be flipped horizontally, flopped vertically, and also flip-flopped, so there were 472 variations overall, which would repeat forever, in theory.

RUNNING THE GAUNTLET

Some tips and tricks to help improve your subterranean life expectancy



GOOD ELF

■ If you're playing solo, choose Elf. He's quick, has good shot speed, receives lots of food, and if you build up his magic he's as powerful as Wizard when casting spells. Valkyrie is also recommended.



GHOST HASSLE

■ Of all the regular enemies ghosts are the most dangerous as they can't be defeated hand-to-hand, and will sap strength on contact. Take them out (and their generators) with shots at the earliest chance.



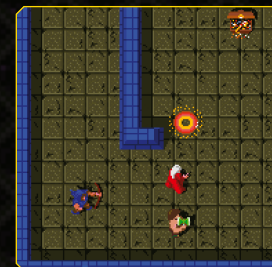
BLOBS BEGONE

■ Those annoying acid blobs are not as invincible as the game suggests. You can destroy them by using a magic potion to stun them, then quickly using another potion to remove them completely.



EXIT STRATEGY

■ As in the original *Gauntlet*, if you stall for a while all of the doors will open, and then eventually all of the walls will turn to exits. It just takes a lot longer for this to trigger in the sequel.



LOSING IT

■ The only way to get rid of the 'IT' curse, besides passing it to others, is to exit the current level. Let the affected player rush towards the exit while you protect them from the pursuing hoard.



» The mugger was a new, thief-like enemy who would dash in and steal your health.

On first impressions *Gauntlet II* may have looked (and sounded) like a quick cash grab, yet it introduced a number of new game features that, while mostly minor, made the game more attractive and challenging – particularly for those that had exhausted the original. It didn't become so repetitive so quickly, that's for sure. Dedicated *Gauntlet II* cabs were manufactured but the game was mainly sold in the form of conversions kits for *Gauntlet*, and while it's always a shame to lose an original cab to a kit, in this case it was more acceptable as the sequel really did supersede the original.

To prove the point try going back to the original after playing the sequel for any length of time. That's almost certainly the reason why Sony opted to release the sequel on the PS3 in 2007, as a digital release complete with online co-op support. Sadly that release is no longer available, but both titles have been included on the various *Midway Arcade* compilations released over the years, and in 2016 the games popped up in *Lego Dimensions* as part of the *Midway Arcade* level pack. There are plenty of opportunities to revisit *Gauntlet II* – and these days you don't need a sack full of silver coins to play.



STOP THIEF!

■ The thief in the sequel is more tricky and will try and dodge your shots. Remember that the thief will follow your path, so it's possible to stop him by pushing a movable wall to block him off.



DRAGONS DEN

■ Dragons take multiple shots to kill. The best method is to hold the reflective shots potion and bounce your shots off a wall. Alternatively, get another player to divert the dragon's attention.



DEVELOPER Q&A

Stuart Gregg unveils the details of the Commodore 64 version



How did you land the job of converting *Gauntlet II* to the C64?

I was hired at Gremlin Birmingham as a junior programmer, about halfway through the original *Gauntlet* development. I was the general dogsbody. I did some testing, wrote some of the intros and so on. After that, I spent a lot of time under programmer Tony Porter's wing and worked on a couple of Z80 projects with him. I also made a start on a Thompson port of *Gauntlet* based on the Z80 code. When it was time to do *Gauntlet II*, US Gold didn't want Bob Armour to work on it as he'd been late with the C64 version of *Gauntlet* and didn't iron out all of the 'features' until he had finished the Atari 8-bit version.

So Bob was off the job and you were brought on?

Yes. I had a lot of respect for Bob. He came from Atari development and was trying to push the envelope with the original C64 version. He got a lot of pressure and flack for not getting it done on time, especially

as it was US Gold's big title for Christmas and I didn't want that to happen to me.

How did you approach *Gauntlet II* then? Were you able to update Bob's code?

I didn't use any of the original C64 code even though I had access to it all. After the issues with the original *Gauntlet*, and the experience I had working with Tony, we decided to basically port the Z80 version to the C64, mainly to make sure it was ready in time for Christmas. So we decided to get rid of smooth scrolling and run at 25fps. It basically plays like the Amstrad CPC version.

That explains why the sequel runs more slowly than the original! Were you pleased with how it turned out?

Overall I was pleased with it. I was 20 at the time, it was my first big title, and I got it done on time. Given my experience, or lack of, at that time as a developer, it would have been silly to try and do more.



40 YEARS OF THE

commodore



PET

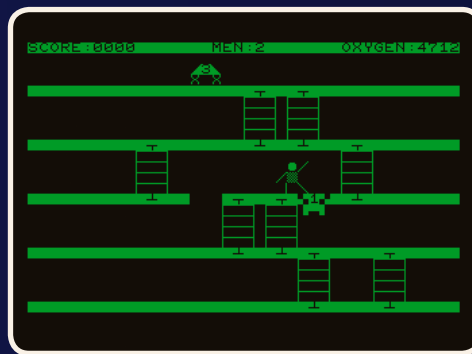
IN CELEBRATION OF THE COMMODORE MACHINE'S 40TH ANNIVERSARY, ANDREW FISHER LOOKS BACK AT THE OFTEN-OVERLOOKED FORMAT, ITS IMPORTANT GAMES AND HOW IT KICKSTARTED CAREERS

The story of Commodore's PET begins in 1976 with its predecessor – the KIM-1, a kit computer based around Chuck Peddle's 6502 processor from

MOS Technologies. Commodore eventually took over MOS, and Chuck established his vision of a fully-assembled personal computer to Commodore founder Jack Tramiel. Steve Jobs and Steve Wozniak were slowly selling Apple-I kits and dreaming of their next machine and it was Chuck who showed them how to make ROMs work with his processor. That led to an extraordinary meeting where a merger deal between Apple and Commodore was on the table, however it never went through. Meanwhile Radio Shack asked for bidders to create a range of computers to sell in its stores, Commodore went to its offices to show a prototype but the Radio Shack turned it down.

Commodore announced the Personal Electronic Transactor (PET) in January 1977 and the race was on. All three companies appeared at computer fairs during 1977, but the Apple II was first to market in June. The slow process of assembly (five Apple IIs per day, compared to Commodore's 30 PETS) meant both were behind Radio Shack and its TRS-80 computer. The TRS-80, with the rival Zilog Z80 processor, received over 10,000 orders in the first six weeks and 5,500 completed machines by the end of the year. Apple's advertising in 1978 gave the impression that it was the fastest-selling – being first with the disk drive and 'killer app' VisiCalc turned Apple's fortunes around.

Some believe the name PET came from the 'Pet Rock' craze, others think it was the initials of one of Jack Tramiel's relatives. It was originally to be the Personal Electronic Computer, but disliking the acronym PEC Chuck chose the word 'Transactor' instead, some workers at Commodore called it 'Peddle's Ego Trip' instead. The '2001' suffix came from Commodore Japan, which selected a font similar to HAL's keyboard



» Jim Orlando's *PET Panic* recreates classic arcade game *Space Panic*, where monsters must be trapped in holes in the platforms.

in the film *2001: A Space Odyssey* for the keys. Starting a tradition: the graphic characters created by pressing combinations of keys were shown on each key.

One of the earliest PET programmers was Leonard Tramiel, son of Jack Tramiel. He wrote a blackjack simulation shown at trade fairs, and a graphical version of *Lunar Lander* – a popular KIM-1 program. The rounded corners of the prototype PET were replaced by an angular metal case, manufactured by Commodore's filing cabinet division, and its keyboard used calculator-style keys. All the components were integrated in the original PET 2001 – the 69-key keyboard, cassette deck and monitor. Although it had no graphics capabilities, the built-in character set (known as PETSCII, since it enhanced the ASCII standard) was designed to create pictures on screen. Card symbols, lines, shapes, dots and blocks were included. There was no sound and no controller ports in the original PET, features that made the Apple-II better prepared for games.

The 1977 trinity of computers ended up using Microsoft Basic. Commodore negotiated a shrewd deal, paying a fixed fee (some say as low as \$10,000) ▶

ESSENTIAL PET GAMES



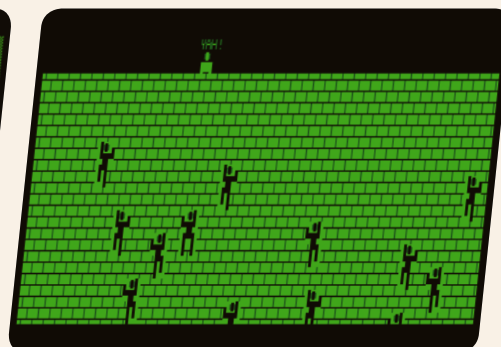
COSMIC JAILBREAK COMMODORE

■ Based on the lesser-known Universal arcade game *Cosmic Guerilla*, the aliens pull bricks out of the jail to free the captives, while you defend the jail from the bottom of the screen in a similar way to *Space Invaders*. *Cosmic Jailbreak* kept players captivated, and it was later ported to the VIC-20.



MILIPEPE ON-LINE SYSTEMS

■ The classic arcade game *Millipepe* (which is also known for being Atari's follow-up to *Centipede*) got this fast-moving unofficial conversion, written in machine code, back in 1981. On-Line Systems would go on to be known as Sierra On-Line, more famous for its adventure games.



SEIGE MIKE SINGLETON/POSTERN

■ Ignore the spelling mistake and concentrate on throwing rocks down at the attackers scaling the castle walls. They will knock each other off with their arms and legs, but it is game over if one reaches the top. It also appears on VIC-20, C64, BBC Micro and Spectrum – additionally, it's inspiration for *Orc Attack*.

► instead of royalties to use the language in the PET and modify it for future machines. Apple initially used Integer Basic, but it was unable to use floating point numbers. Apple licensed Microsoft Basic instead, with Bill Gates doubling the fee he got from Commodore. The TRS-80 started out with Tiny Basic, but decided to introduce Microsoft Basic in 1978 – at double the fee Apple had paid. Early commercial titles were written in BASIC, allowing them to be ported between machines. It would take a machine code monitor and assembler to make things easier for programmers.

"I bought a PET with 8K RAM for \$800 in April 1978, at The Computer Store in Los Angeles," says Jay Balakrishnan, founder of Human Engineered Software. "The 4K model sold for \$600 but I bought the 8K, paying \$200 for an extra 4,096 bytes of RAM!" Jay's introduction to programming had been a university course using an IBM 360 mainframe. "There was little

"I WROTE LOADS OF OTHER PET GAMES, BUT NONE WAS AS MEMORABLE AS AIR ATTACK"

Peter Calver

information about personal computers anywhere. During the final three years at university, I developed a passion for computer languages and learned programming in 20-plus languages. So by the time I got the PET, I had learned enough to start programming it from day one."

There was no PET 6502 assembler available, so Jay began work on one after he helped Tom Rugg write the first PET book, *32 BASIC Programs for the Commodore PET*. HesBal (Basic Assembler Language) was inspired by an assembler from the IBM mainframe. "When HesBal neared completion, I asked Tom for his critique," Jay says. "He advised that HesBal was good enough to sell commercially. I spent a few more months to program HesEdit, which became the PET's first full-screen editor; HesBal was the world's first 6502 Assembler. I remembered a forgotten promise made to myself – that by 25, I should have my own company. On my 25th birthday, Human Engineered Software (HES) was founded. HES got started selling HesBal and HesEdit together for \$16."

Jay used HesBal to create HesCom – software and hardware to control a communications cable linking the PET and a VIC-20. "[It was] mostly in BASIC, with a small core of fast/tight machine code written using HesBal and HesEdit. Thus HesCom was very fast and sold very well. Also, Terry Peterson used HesBal to create HesMon. HES sold HesMon (a programming/debugging tool for Commodore PET and VIC-20), which was used by numerous other programs." Jay

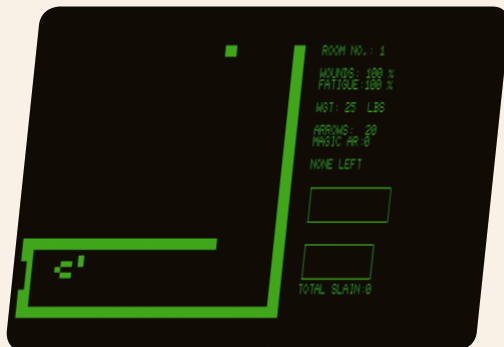
sees the PET as important to his career. "The PET was instrumental in increasing my passion for personal computers and software. [It] set me firmly on the road to entrepreneurship. After starting HES, I founded four other startup companies over the next 13 years."

In early 1978, the PET reached the UK and impressed many eager users. Author Douglas Adams fondly remembered his first encounter, quoted in the posthumous collection *The Salmon Of Doubt*. "It was quite a large pyramid shape, with a screen at the top about the size of a chocolate bar. I prowled around it for a while, fascinated." Jeff Minter began programming games on the PET, first in BASIC and soon in machine code for added speed. Mike Singleton's first commercial games (*Seige*, *Skj*, and *Space Ace*) debuted on the PET. Mike also ran play-by-mail game *Star Lord* using a PET.

"I taught myself BASIC and then learned assembly language," says Peter Calver, founder of Supersoft. "Well, first I wrote an assembler in BASIC. It was hard to get hold of software so I decided I may as well write my own." Peter's earliest computing experience was a DEC mainframe. "In 1978 I saw the PET and other early computers (Apple II and TRS-80) in the Byte Shop in Ilford, and after some months of indecision decided on a PET," he says. They were all very expensive, but I found a dealer in Luton who offered a five per cent discount, bringing my 8K PET down from £695 to a mere £660. Two years earlier I'd bought a three-bedroomed house for £8,500, it was a lot of money for the time. Within less than a week of buying the PET I placed an advert in *Personal Computer World*, and Supersoft was born.

» *Invasion Orion* had an in-depth manual describing the game mechanics. Image used with permission from PET GameBase.

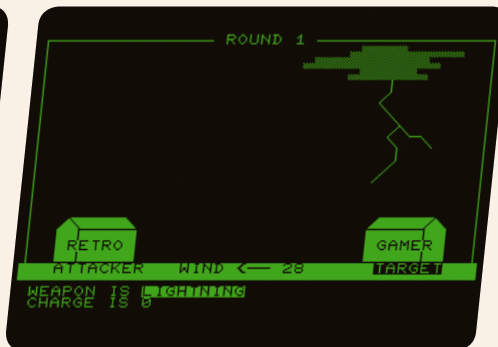




TEMPLE OF APSHAI

AUTOMATED SYSTEMS/EPYX

■ Epyx used the *Dunjonquest* engine for a series of role-playing games, and the *Temple Of Apshai* trilogy became the most popular. Room descriptions included in the game's manual added to the atmosphere. Later conversions for the VIC and C64 added fancier graphics, but the core gameplay remains the same.



OURANOS!

AKA WEATHER WAR, CURSOR

■ Programmed by Kathy Higby and published by *Cursor* magazine, this fun title sees two wizards try to destroy each other's home with weather-based spells. Rain, Hail, Lightning and Tornado can all damage bricks, if the wind is blowing the right way. Random acts of nature add danger to the proceedings.



» The simple manual for 3D *Star Trek* on the PET. Image used with permission from PET GameBase.



» Leonard Tramiel, the son of Commodore's founder, programmed *Lunar Lander* and *Blackjack* for the machine.

Once I started advertising I was contacted by other authors who wanted me to publish theirs. Most of them were better programmers, so I was delighted."

"I wrote loads of other PET games, but none was as memorable as *Air Attack*," says Peter. What inspired it, a game seen as a forerunner of the *Blitz*/one-button genre? "In the summer of 1979 my brother told me about an arcade game he'd seen called *Canyon Bomber*, which had a plane flying over pillars of rock. Without seeing the game myself (in fact, I only saw it for the first time many years later), I started to program it on the PET based on my brother's description. When I got it working, probably a couple of hours later, I realised that it would be more interesting as a cityscape with skyscrapers." Unusually, the game was printed as a listing in a magazine, with a retail version on tape available from Supersoft (with colour overlays for the screen). Peter adds, "I was both annoyed and flattered when Commodore launched the VIC-20 with *Blitz*. I guess it was my fault for putting the listing in a magazine – then again, I got an enormous amount of publicity from *Personal Computer World* over the years so it was probably worth it."

Just how important was the PET to Peter's career, though? "It was crucially important, because it

PET GAMEBASE

JONBOS AND MAD ARE PRESERVING COMMODORE PET GAMES, AND THEY TOOK THE TIME TO ANSWER SOME QUESTIONS

What makes it important to preserve this history?

JonBos: It is the origins of gaming. Programmers had to be passionate to make games on a PET, and astute.

Mad: The old hardware and magnetic media will not last forever. It also shows just how far computer technology and games have progressed since 1977, when programmers had to make every byte count.

How many games have you preserved?

J: Most of the known ones as only a few are missing. There are also some in German and other languages that were not included as we could not figure them out.

M: The GameBase has 651 entries so far, but there are quite a few non-game programs included. But that's still a high number for a school/business computer.

Is there a 'holy grail' to find?

J: *Dungeons Of Death* was the one and Mad found it, which was amazing.

M: *The Dragon's Eye* by Automated Simulations – Southern Software (Epyx). We have a C64 conversion, thanks to it being written in Commodore BASIC. It's hard to find even photographic proof of

the original PET cassette. But the game I would most like to be made for PET is *Donkey Kong*. I love that game!

What can people do to help?

J: Finding the missing *Dunjonquest* games would be the best.

M: If they know of any games not listed in the GameBase they used to play or own, please send us the file, cassette or any info they can remember so it can be included in any future version.

What are your favourite PET games of all time?

J: The RPG *Telengard*, and *Car Race* by Satoru Iwata (Nintendo CEO, 2002-2015). I think it was one of his first games and it is on a PET! The first game I ran on the emulator was *Scramble* which remains an all-time favourite of mine.

M: *Nightmare Park* by Bob Chappell, *Space Invaders* and *Night Race*. Just recently I was sent *Paladin* from Kevin Pickell (an ex-EA programmer). Shoot-'em-ups don't get any better in 16K.

What do you make of the new homebrew games?

J: It shows the passion in making games and being clever about it. The modern games are breathtaking and show real talent.

"WHEN I BOUGHT THE PET I KNEW I WAS LIKELY TO BE MADE REDUNDANT THE NEXT YEAR"

Peter Calver

► wasn't just a games machine or a machine for the home, so there was a market for a wider range of software. When I bought the PET I knew I was likely to be made redundant the following year, so it was a way of providing me with an alternative career option."

In the US, several companies started with a PET. Jim Connelley and Jon Freeman created strategy game *Starfleet Orion* on the PET and set up Automated Solutions to sell it; the company was eventually renamed Epyx. Its sequel *Invasion Orion* allowed the player to load in new scenarios and take on a AI opponent, and included a 'scenario builder' – one of the earliest game construction sets. Both coders were big *Dungeons & Dragons* fans, which led to the creation of the *Dunjonquest* engine. *The Temple Of Apshai* RPG trilogy ran on it, showing action from overhead.

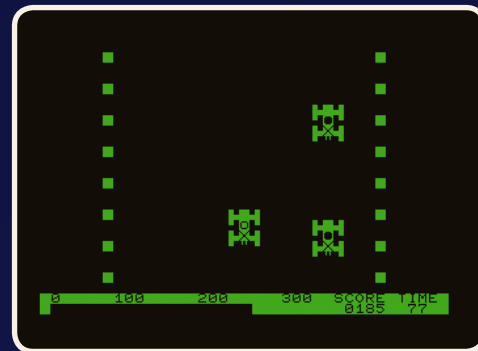


» *Space Invaders* for the Commodore PET came with instructions on how to build a sound add-on.

Board game manufacturers Avalon Hill formed a software division and released several games for the PET. As well as strategy games such as *B-1 Nuclear Bomber* and *Midway Campaign*, there was hit RPG *Telengard*. The late Daniel Lawrence created the original version on a mainframe and converted it to run on the PET, before porting the game to TRS-80 and Apple-II. It predates the *Dunjonquest* games, and shares many similarities to *Rogue* – however players could visit an inn to save their progress. Avalon Hill saw the game at a convention and signed the licence to distribute the game, coding the popular C64 port in-house. A tie-in with *Sports Illustrated* magazine also led to the creation *Baseball Strategy*. Many of Avalon Hill's games featured multiple versions – often there would be TRS-80, Apple II and PET versions alongside each other.

One of the biggest sources of PET software was *Cursor* magazine, with 30 issues released between 1980 and 1982 by Codeworks. This monthly title came on cassette, featuring a mix of games, animations and utility programs. The Toronto PET User's Group (TPUG) is one of the oldest established computer clubs and put out another important magazine, *The Transactor*. In Japan, the PET User's Club counted Satoru Iwata among its members. His first known computer game was for the PET, in the shape of *Car Race II*.

The PET was well suited to adventure games, particularly the later models with an 80-column screen. It received conversions from the TRS-80 of the early Scott Adams adventures. Scott believes these were created by fans, from the BASIC listings published in *BYTE* magazine.



» Satoru Iwata created *Car Race II* before becoming an intern at Commodore Japan and then joining HAL Laboratory.

With the Apple-II gaining momentum and the Atari 2600 dominating the early Eighties, PET games began to dry up.

Commodore stopped producing the various PET models in 1986, but the machine has lived on in emulation. The PET GameBase has gathered together and preserved many games. There's also a lively homebrew scene.

"We owned a PET about the same time we had a Commodore 64. Most of my PET activities came from spending lunch hours and after school time in the computer room at junior high," says Mike Johnson, known as Mr NOP. "I wanted to create something on a platform that was pretty much unsupported." Mike has programmed *Lady Bug* (based on the Universal arcade game, with its maze of turning gates) and *Oil's Well* (the Sierra On-Line game, based on arcade game *Anteater*). "PET owners are starved for software. Most of the older software and even the newer is written in BASIC. I wanted to create something enjoyable to play in pure machine language." Mike also ported the PET game *Slime* by Jim Summers to the C64.

Martijn Wenting of Revival Studios codes for both the VIC-20 and the PET, but what draws him to the latter? "I like the challenge," he says. "I'm using emulators

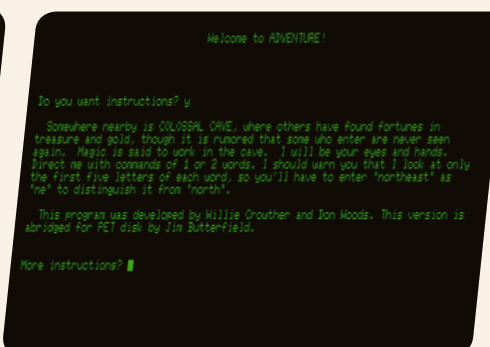
QUESTING ON THE PET



ADVENTURELAND

SCOTT ADAMS

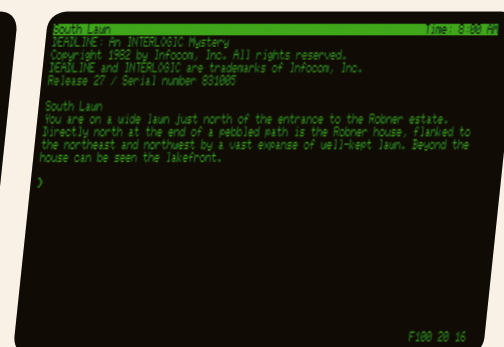
■ Several of the classic Adventure International titles were ported from the TRS-80 to the PET, and would later be converted under licence by Commodore for the VIC-20. This debut adventure featured 13 treasures to find and a score counter, but no other characters to interact with.



COLOSSAL CAVE

JIM BUTTERFIELD

■ The first ever adventure game appeared on mainframe computers, based on Will Crowther's real-life caving experiences and enhanced by his friend Don Woods. It was converted to the PET by renowned Commodore programming expert Jim Butterfield, although it is an abridged version with fewer locations.



DEADLINE

INFOCOM

■ The Z-Machine allowed Infocom to bring its adventures to many different machines back in the Eighties. Other programmers have now ported it to new systems, including the PET. This game sees the player as a detective investigating the murder of a rich man, interrogating suspects and finding clues.

BEST IN SHOW

HOW THE COMMODORE PET SHAPED UP AGAINST ITS RIVALS AT THE TIME

	COMMODORE PET 2001	APPLE-II	RADIO SHACK TRS-80
PROCESSOR	6502 @ 1 MHz	6502 @ 1 MHz	Z80 @ 1.77 MHz
MEMORY	4K or 8K (expandable to 32K)	4K (expandable to 64K)	4K (expandable to 48K)
COLOURS	Monochrome	16	Monochrome
GRAPHICS	Built-in graphics characters (40x25, effectively 160x100 pixels)	Lo-res 40x48 pixels (16 colours) / hi-res 280x192 pixels (six colours)	128x48 pixels
SOUND	None (beeper can be added)	Beeper	Beeper
CONTROL PORTS	None	Internal (for paddles)	None
LAUNCH PRICE	\$595 with built-in monitor and tape deck (\$2,400 in 2017 prices)	\$1298 without monitor or tape deck (\$5,235 in 2017 prices)	\$600 with black-and-white display, tape deck extra (\$2,420 in 2017 prices)
LIFETIME SALES (ACROSS ALL MODELS)	600,000	5 million	200,000

throughout the development. However I recommend any developer to also test on the real hardware." Martijn has created seven PET games, transferring the gameplay from his other homebrew titles – although *Boxing Champ* started life on the PET before being ported to the ZX81. "I like using the PETSCII set as I think it gives the games that PET charm and style. I think there is no limit to what can be achieved if you are creative – for example, my game *Rush* uses parallax scrolling backgrounds." He has more games planned. "I'm looking to convert Videopac game *Cavity* to the system and I have a prototype for a working CHIP8 emulator, which will allow for a number of CHIP8 games and demos to run on the trusty old PET."

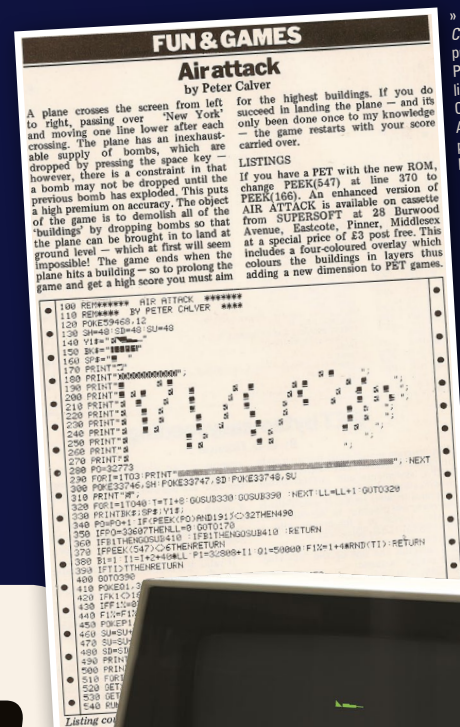
Jason Kelk coded *Blok Copy* for the PET. "There are bits and pieces for a few more games lurking among my files in various states, including a proof-of-concept hardware scroll that relies on later models of PET," he says. The original *Blok Copy* used coloured tiles, so how well did it transfer? "I talked Doug 'Bizzmo' Roberts into

spending some time making distinct tiles for the PET. It wasn't easy getting something we were both happy with, but the final result works better than my own first attempts!" We were keen to hear what drew Jason to the PET. "The hardware restrictions looked like an interesting challenge and having a 6502 processor gave me a head start," he replies.

Mike has one final thought. "I know that programming is about enjoyment and having fun, but to me it's like composing a song nobody will hear or writing a book nobody will read – there needs to be an audience. Vinyl records and cassette tapes are making a comeback, so the PET could become popular again."

The PET may not have had the memorable games of its rivals or the Atari 2600 console, but it still has a dedicated community enjoying the challenge of working within the machine's limitations. ★

Thanks to our interviewees for taking part and Kieren Hawken for his help.



Personal Computer World published the PET BASIC listing of Peter Calver's *Air Attack*. Advert used with permission from Peter Calver.

Credit: Photograph by Rama, Wikimedia Commons. CC-by-sa-2.0-fr

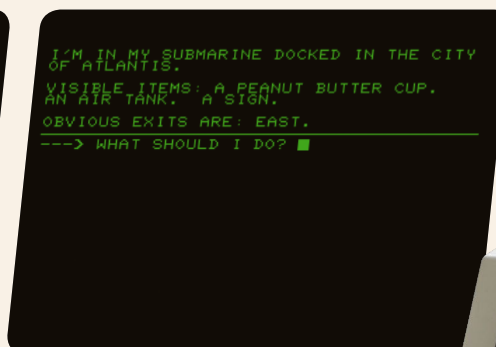
COMMODORE'S MACHINE PLAYED HOST TO A NUMBER OF GOOD ADVENTURE GAMES



DOG STAR ADVENTURE

LANCE MICKLUS

■ The arrival of *Star Wars* in 1977 influenced an unquantifiable bunch of programmers. Lance Micklus wrote *Dog Star Adventure* for the TRS-80, changing character names to avoid copyright. This later PET version restored the original names and added a PETSCII title picture of Darth Vader.



VOYAGE TO ATLANTIS

JOHN O'HARE/MAD HATTER

■ Greg Hassett created several early text adventures, with John O'Hare the programmer responsible for porting them to the PET. *Atlantis* charged players with relocating a bunch of treasure from the titular lost city into a submarine.



CHAS

INSTRUCTIONS



BACK WHEN COPS AND COOL CARS WERE ALL THE RAGE ON TV, TAITO GAVE US THE OPPORTUNITY TO LIVE OUT OUR FANTASIES OF TAKING PART IN A HIGH-SPEED PURSUIT. NICK THORPE HAS BEEN DISPATCHED TO INVESTIGATE THIS CLASSIC COIN-OP...



Smashing through roadblocks, boxes and other such obstructions is all part of the police chase fun.

Police chases are amongst our guiltiest of pleasures. Are they exciting? Yes, without a doubt – but they're also extraordinarily dangerous for everyone involved, from the escapees and their pursuers to the dozens of innocent drivers and passengers in their path. Fortunately, videogames allow for us to indulge in these forbidden pleasures without putting anyone else's life in jeopardy, and in the late Eighties there was no better way to participate in a police chase than to drop some change into *Chase HQ*. You play as Tony Gibson and Raymond Broady, members of the police's elite Chase HQ department, who are tasked with tackling the high-speed pursuits that other officers just aren't qualified for.

In many ways, the premise made it a perfect game for its time. The Seventies had produced great car chase films as well as *Starsky & Hutch*, but the

CHASE HQ.



• You'll often set criminal cars ablaze by ramming them, but they never spontaneously explode like in the movies.

Eighties was the era where they were all over TV in popular cop shows. Where American muscle cars were often the focus of the chase movies, shows like *Magnum, P.I.* and particularly *Miami Vice* often featured European sports cars, including the likes of Porsche, Ferrari, Lamborghini and Lotus vehicles. Taito took major inspiration from these sources for *Chase HQ*, incorporating similar cars and a definite American theme. In particular, the designers focused on Porsche – two of the five enemy vehicles are from the German manufacturer, and Gibson and Broady used a Porsche 928 exclusively.

As a game, *Chase HQ* is superficially similar to many other Eighties racers – the powerful sports car, scaling traffic and time limit are all present and correct, after all. All of these elements had been present in Taito's *Full Throttle*, a 1987 arcade racer which was clearly influenced by the success of



Sega's hit *Out Run*. Its main innovation was allowing the player three turbo boosts per checkpoint, which had to be strategically deployed on straight roads and low-traffic stretches. It wasn't a revolutionary game by any stretch of the imagination, but it did well for Taito.

Chase HQ incorporates all of those elements, and then plunders a little more from *Out Run* by incorporating forked roads. However, *Chase HQ* was no simple exercise in following a trend. What sets *Chase HQ* apart is your two-part goal of locating and then immobilising a target vehicle, driven by

• You'll know when you've found your target, thanks to a red warning and large arrow.



Q&A: MARK EDWARDS

WE CHASE DOWN THE MAN BEHIND THE GRAPHICS OF THE 16-BIT COMPUTER CONVERSIONS

What did you think of the original arcade game?

I loved it. At the time there were many arcade racing games but this had a unique twist. It also held a subtle [old-school] TV style look to the game and this was something I was brainwashed with as a kid. My dad was also in the police force, so maybe this helped!

Why was Teque Software commissioned to create the 16-bit ports by Ocean?

Our MD, Tony Kavanagh, had links with Ocean, especially Gary Bracey at the time. Krisalis had a name and a knack for arcade conversions with the likes of *Toobin*, *Scramble Spirits*, *Continental Circus* etc...

What was hard about working on the Atari ST and Amiga versions?

As with all conversions, copyright logos and style are of the utmost importance. I remember struggling to get the loading screen right and this created many a laugh with my fellow artists.

How much support did you receive?

Very little I feel. All feedback came back via Ocean. Back in those days game development was easier in many ways. We had little feedback compared to what I'm working on now – *Dead Island 2*...

Who worked on the project and how long did it take?

From what I remember we had around six months to convert it to all formats. This was quite a feat for all projects we were handed and something I'm proud of with such a small development team.



Did you create the loading screen and were you aware the main character is based on Han Solo?

I did indeed, and no I didn't know this... I really struggled with the lips as far as I can remember!

What's the best anecdote you can remember whilst working on Chase HQ?

Whenever I think of *Chase HQ* I always think of the struggle I had drawing those lips! I really enjoyed those times, much more so than now. Krisalis was a great company to work for.

The scores at the time ranged from 55% to 90%. Were they a fair reflection of the game?

I think so, it's a fair result given the time we had to extract graphics from the arcade version and convert to the many formats.

How do you think your version holds up today?

I'm pretty shocked to see it now after going through 20+ years of game advancement. At the time it had charisma and a certain look, as mentioned. It's lovely to think some old folk still love this game and [it's] something I'll always treasure.

Why do you think Chase HQ remains so popular?

Back in those days there was a lot of competition. Fortunately, we had a unique advantage with an arcade conversion. A game that was thoroughly tested and embedded in the Nineties kids. How could it ever fail, given a good conversion!



► Ramming enemies is most effective when you've engaged a turbo boost. Woooooh!!

► a lowlife criminal. This isn't a simple endeavour, mind – you need to avoid the many law-abiding citizens using the road, both to ensure their safety and ensure your target doesn't get away. Each successful overtake awards 200 points more than the last, rewarding you for clean driving. However, clean driving goes out of the window when you finally reach the bad guy, as your only option for taking down the perp is to ram his car off the road.

A large part of what makes *Chase HQ* so good is the excellent presentation of the game. At first glance, you might think that it doesn't advance the genre over *Out Run*, given the relatively similar sprite scaling technique.

However, it soon reveals itself to be even more visually impressive. The game incorporates proper tunnel sections, split-level road drawing to properly represent ramps, and excellent incidental animations such as a helicopter hovering overhead to help scope out your route. Likewise, the ace music could have come out of any American cop show of the era, particularly the bassy tune that plays during the briefings you receive from Nancy, the Chase HQ radio dispatcher.

Speaking of Nancy, her mission briefings are a joy to sit through thanks to the full voice acting provided for each stage. Brilliantly, even the crimes she tells you about reflect the preoccupations of the time, as you can see from the inclusion of drug pushers ►



► Civilian traffic has a tendency to obstruct your attempts at destructive justice. Try and ignore them and go for the arrest.



CONVERSION CAPERS

WE SORT THE GREAT LITTLE RUNNERS FROM THE CLAPPED-OUT CRAP

ZX SPECTRUM

1989

■ This is renowned as one of the very best games to appear on the Speccy, and rightly so. The presentation is outstanding, even squeezing in voice clips, and the gameplay is fast and smooth. You really couldn't ask for a closer conversion on Sir Clive's pride and joy.



MSX 1989

■ This looks like the Spectrum version, but don't be fooled – it's slower and doesn't include much of the brilliant presentation. It's better than the C64 version, but that's not saying a lot. It's also quite a rarity, having been released in limited parts of Europe.



MASTER SYSTEM 1990

■ This is a pretty good conversion. It's based off of the Famicom version, and includes the same upgrade options. It's fast and attractive, but the scenery lacks variety due to the flat roads and total lack of tunnels. This version is exclusive to PAL regions.



SHARP X68000 1992

■ This Japanese computer is renowned for some excellent conversions, but *Chase HQ* isn't one of them. Object movement is jerky and the scenery has been rendered horribly bland, with no off-road sections or forks in the road. The music is pretty good, though.



AMIGA 1989

■ There's little to differentiate between the Atari ST and Amiga conversions of *Chase HQ*, which means you're good with either. To be honest, though, it's made to look a bit poor by *Lotus Turbo Challenge* and the driving sections in *Batman: The Movie*.



PC ENGINE 1990

■ This is a fast and nice-looking conversion featuring good music, nice visuals and most of the arcade game's luxuries. Most of the corners seem a bit severe and the engine noise is rather annoying, but this is definitely one of the better versions out there.



SATURN 1996

■ You'd expect an arcade-perfect conversion here, but it's different to the coin-op original, with redrawn sprites and differences in visual effects. It's still the closest home version – just don't expect the near-identical closeness of a *Sega Ages* conversion.



AMSTRAD CPC 1989

■ It's not as quick as the Spectrum version, but the difference is no huge deal and in every other respect this is another amazing conversion. It packs in everything else that makes that version great, and the colour graphics give it an edge over its 8-bit rivals.



ATARI ST 1989

■ This conversion was developed by Teque, the same company behind the C64 version. The game fares better on the ST – it looks nice in static shots, but it does run slowly and the handling is poor. There are better conversions out there, so play those instead.



GAME BOY 1990

■ The game doesn't look too bad in monochrome, but *Chase HQ* on the Game Boy is poor. It doesn't handle very well, and in a driving game that's a ruinous problem. *Super Chase HQ* is a far better take on the same idea for this format, so play that.



COMMODORE 64 1989

■ If the people behind *Chase HQ* for the C64 were actually in *Chase HQ*, you'd be ramming them off the road for the murder of a classic. Not only is it visually underwhelming, it's so slow that your crime-fighting efforts would be better carried out on foot.



FAMICOM 1989

■ This is an attractive conversion for the 8-bit console, complete with speech and support for the analogue *Arkanoid* controller. It also goes a step beyond the arcade game by allowing you to trade your points for new car parts between stages.



GAME GEAR 1991

■ The *Chase HQ* experience on Sega's handheld is almost exactly the same as on the Master System, to the point that it runs in the hardware's Master System graphics mode. The only difference is a redrawn HUD that looks better on the small screen.



FM TOWNS

1991

■ Here's an astonishing conversion, which is very close to the original. The view is a bit narrow and the scaling isn't as smooth, but in all other respects this is utterly superb. However, the hardware trickery used to run this causes some persistent colour glitches.

PIXEL PERFECT

CALLING ALL CARS... REPORT TO THE DOUBLE-PAGE SPREAD IMMEDIATELY



PORSCHE 928



PORSCHE 959



FORD F-150



FERRARI 288 GTO



» This whirlybird will help you out by telling you where the criminals are headed next.



» Tunnel effects were a noticeable improvement over previous arcade racers like *Out Run*.

16-bit machines, an MSX version was produced for continental Europe which was distributed by Erbe Software. If you're surprised by the fact that it wasn't a Japanese release, that's because Taito wasn't tremendously proactive in chasing the domestic home computer market – two versions were released by different companies for the high-end computers of the time, with wildly different results.

Instead, Taito concentrated its efforts on the home console market. The PC Engine received a relatively straight conversion, but the Famicom, Master System and Game Gear versions all offered a somewhat deeper experience – perhaps in recognition of the fact that the arcade game only lasted ten minutes once mastered. The five stages of the arcade game were repeated three times, and points could be traded for car upgrades between rounds. Your oil, tyres and bumper could all be upgraded, while extra turbo boosts and a supercharger could be added to give you the speed needed to bust some of the tougher criminals.

Most of the elaboration on the *Chase HQ* formula would come through sequels, though. *Special Criminal Investigation* followed the same 'pursue and destroy' formula, but gave you the option of shooting the criminal vehicle with a gun. It was another popular game but one which didn't receive the wide home release of its predecessor. *Chase*

**SPEED
LIMIT
55**

► (a year before the debut of the 'winners don't use drugs' screen) and Eastern bloc spies (a year before the fall of the Berlin Wall). She'll also warn you if you're running low on time during a stage, and that's not the only voice acting you'll be treated to. Your partner will often encourage you with phrases like, "Let's go, mister driver," and has individual lines for each of the game's five arrest scenes.

The success of the arcade game was immediate upon its release in 1988, and Taito quickly seized on its popularity with a series of home conversions. For the European home computer market, rights were granted to the licensing powerhouse Ocean, which managed to stage an impressive multiplatform release in 1989. As well as covering the usual 8-bit and

Q&A: BILL HARBISON

WE SPEAK TO THE GRAPHICS ARTIST BEHIND SPECTRUM AND AMSTRAD VERSIONS OF CHASE HQ



on board to help with the graphics. While this was happening, Gary had employed Jon O'Brien who was working with Mike on the game engine and when *WEC Le Mans* was finished I moved over to *Chase HQ* full time.

How much access did you have to the original coin-op?

We were told about the game but I hadn't seen it before and before long the cabinet arrived at the office and caused quite a stir. I used to sit in the seat with an A4 pad and sketch the frames for the cars and the other graphics in the game. Within a couple of weeks the cabinet was taken away and we were left with the circuit board and steering wheel hooked up to an old TV. At least we had access to the game and we didn't have to pay a penny to play it.

What differences were there between the 64k and 128k versions?

We managed to squeeze just about all the game into the ZX Spectrum with a few additional details like the character portraits and the ending. The portraits were mostly based on Ocean employees like Steve Thompson, Martin McDonald and Kane Valentine, while Nancy was based on Dallas Cowboys cheerleader Dorie Braddy. The ending was renditions of publicity shots from the, soon to be released, *Lethal Weapon 2*. The only additions to the 128k version were the superior music and digitised speech.

Because of the added colour we feel the Amstrad version is the best, is this something you'd agree with?

The extra colours make the game graphics look much brighter but the double-width pixels meant that some detail was lost on the cars and character portraits. It also seems like the Amstrad version is slightly faster, too.

Was there anything about the conversions that you weren't happy with?

I would improve be the enemy intro screen with the radio message. It's a little basic compared to the arcade version.

Why do you think it's generally considered as one of Ocean's best conversions?

I think we managed to capture the spirit of the arcade and make it fast and smooth – and bouncing title screen. Little touches like that show that we wanted to do the best job that we could.

What made *Chase HQ* such a good game to play?

It was a fast, slick arcade game which wasn't just about driving towards a goal. It had an extra layer on top which made it all the more playable. Without the addition of catching the criminals by bashing their car off the road *Chase HQ* would have been just another *Out Run* clone. So when myself and Jon O'Brien were informed that we would have to try and cram this beast into a ZX Spectrum we didn't take the job lightly. We wanted to do the best job we could, our job was to outrun *Out Run*!

Were you aware of the poor reception that the *Out Run* conversions had received and did you want to improve on that with *Chase HQ*?

Before I got into the industry I remember getting a cover tape with a magazine containing a playable demo of *Out Run*. It was crushingly disappointing! The car was nicely drawn and some of the other objects were fine but it wasn't particularly playable. It was slow and the roads were badly defined. There had already been superior racing games, like *Enduro Racer*, on the market and even further back there was *Full Throttle*. I think I probably played it just the once before taping over the cassette with something else. It seemed to me at the time that it wouldn't receive favourable reviews, although I now understand that it has its fans.

A few months before starting on *Chase HQ* I had worked on a racing game that was superior to *Out Run*. That was *WEC Le Mans*. If we managed to make *Chase HQ* as good as that we would have been onto a winner.

How did you become involved with the Spectrum and Amstrad ports?

I was working on *WEC Le Mans* which was coded by Sentient Software with Ocean's Mike Lamb. I was at a loose end after finishing by previous game and was brought



LOTUS ESPRIT



LAMBORGHINI COUNTACH

“At the time there were many arcade racing games, but this had a unique twist”

Mark Edwards

HQ II for the Mega Drive introduced a choice of player vehicles, allowing you to trade in your sports car for a slow but devastating truck, and the second arcade sequel, *Super Chase: Criminal Termination*, retained this option but shifted the action to a first-person perspective. *Super Chase HQ* for the SNES would also adopt this viewpoint.

By the mid-Nineties the appetite for *Chase HQ* had waned, and Taito pursued other ventures – but it did bring the series back a couple more times later on. In 2000, *Chase HQ: Secret Police* for the Game Boy Color adopted the *Special Criminal Investigation* mixture of driving and shooting, but added an odd tactical map section in which you place officers around town and try to intercept the criminals prior to the main chase. The arcade game *Chase HQ 2* arrived in 2007, and it offered full-3D visuals

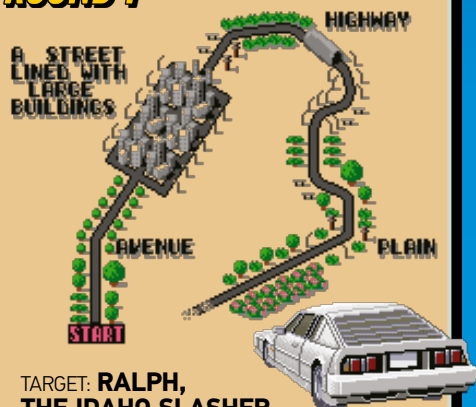
» Time of day effects are a big part of *Chase HQ*, showing the passage of time during your pursuits.



CASE FILES

FIVE DANGEROUS CRIMINALS NEED APPREHENDING IN CHASE HQ – HERE'S THE FULL LOWLIFE LOWDOWN

ROUND 1



TARGET: RALPH, THE IDAHO SLASHER

WANTED FOR: FIRST-DEGREE MURDER

■ If this chase is actually taking place in Idaho, it can only possibly be Boise – it's not exactly a state known for its large urban communities, and this stage will take you from a lovely garden avenue straight into the city streets. Going right at the junction will take you off-road, slamming through construction barriers and shrubbery before heading out onto a cloudy plain. That's where you'll encounter the murderous Ralph.



» [Arcade] Quick! Ralph is making his escape and attempting to flee. Ram him off the road before he can do so.

STAGE 1 COMPLETE!

OK! You're under arrest on suspicion of first degree murder.



ROUND 2



TARGET: CARLOS, THE NEW YORK ARMED ROBBER

WANTED FOR: ARMED ROBBERY AND MURDER

■ Carlos has wandered far from his home in the Big Apple, as the sunny coastline here suggests California. You'll get help from the helicopter in this stage, which hovers overhead before you reach the junction, where you can take the tunnel onto the highway or the ramp. You'll most likely catch up with our esteemed armed robber in the desert, where he's making a break for it in a flashy yellow car. Way to draw attention to yourself, dirtbag!



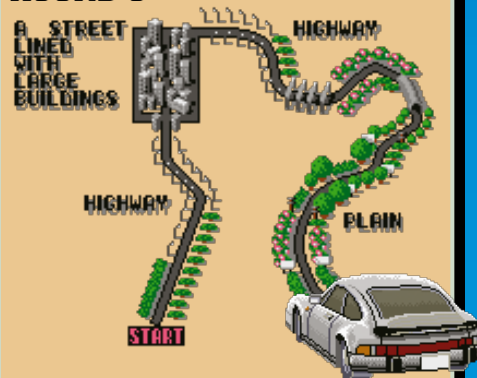
» [Arcade] Carlos would have possibly gotten away with armed robbery, but he was thwarted by a large yellow arrow...

STAGE 2 COMPLETE!

OK! You're under arrest on suspicion of armed robbery and murder.



ROUND 3



TARGET: CHICAGO PUSHERS

WANTED FOR: SELLING DRUGS

■ This place looks a bit like Chicago, so it seems we've caught our dealers pretty soon in their bid for freedom. You'll start off late in the afternoon, and it's quite a chase because when you've finally gone off-road via the left fork and caught up to the bad guys, the sun is setting and the sky is a beautiful shade of orange. Walter White should never have moved to Chicago!



» [Arcade] It's too nice an evening to chase criminals, but you've got a job to do and by gosh you're going to do it well.

STAGE 3 COMPLETE!

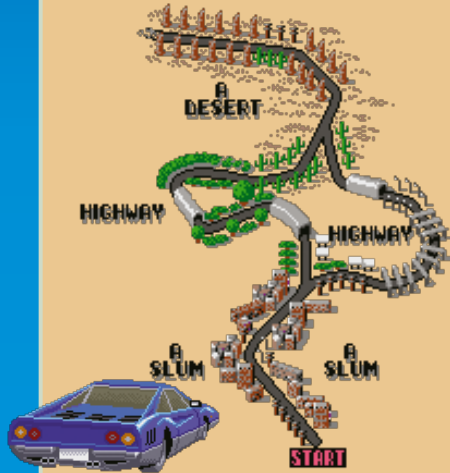
OK! You're under arrest on suspicion of selling drugs.



“It was a fast, slick arcade game which wasn’t just about driving towards a goal”

Bill Harbison

ROUND 4



TARGET: LA KIDNAPPER

WANTED FOR: KIDNAPPING

■ It's already early evening as you race out of the slums, and this jerk is in a powerful car so don't expect to catch him before nightfall. You'll have help from the chopper again here, and if you head up the ramp on the right you'll take the freeway out to the desert. For some reason, it's fine to ram into a kidnapper's boot, despite the likely presence of the kidnapping victim, so just go for it.



» [Arcade] The kidnapper's car took such a bashing, Gibson and Broady couldn't open the boot. We're sure everything was okay...

STAGE 4 COMPLETE!

OK! You're under arrest on suspicion of Kidnapping.



ROUND 5



TARGET: EASTERN BLOC SPY

WANTED FOR: ESPIONAGE AND FIRST-DEGREE MURDER

■ You don't get a map for this early morning chase, nor do you know what the spy's car looks like. Ultimately, that means that he's doing a pretty good job as a spy. Thankfully, you're able to identify him in a bright red car, rather than the standard issue Lada Riva or Trabant that his comrades back home have to put up with.



» [Arcade] Despite having guns, Gibson and Broady kept forgetting to use them. At least until the sequel...

STAGE 5 COMPLETE!

OK! You're under arrest on suspicion of espionage and First degree murder

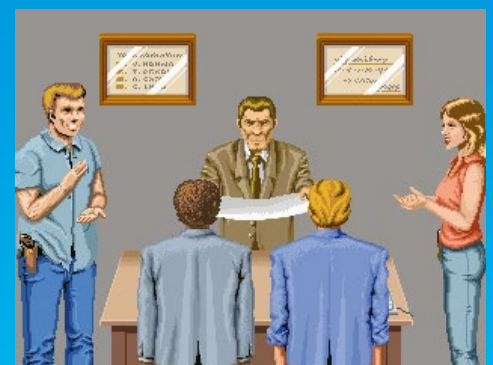


» The game takes place in diverse settings from out-of-town freeways to inner-city slums and the suburbs.

► with a light cel-shaded look, with new features including power-up icons and oncoming traffic.

While seek-and-destroy racers aren't tremendously common today, the gameplay style has been incorporated into a variety of other racers. You can see traces of *Chase HQ* in the likes of *Driver*, which has a Pursuit Mode, some *Grand Theft Auto* missions, the *Burnout* series since *Burnout 3: Takedown* and, of course, *Need For Speed: Hot Pursuit*. The nearest equivalent in recent times though was the *Pursuit Force* series for the PSP, which takes the *Special Criminal Investigation* template and adds more vehicles plus some straight shooting sections.

So while *Chase HQ* series is currently in its longest period of inactivity, having been dormant since 2007, it's clear that the impact it made in the late Eighties is still being felt today. After all, why shouldn't it be? Any game that lets you live out your *Miami Vice* fantasies is fine by us, as is anything that lets you pull off a police chase without endangering lives. ★



» Everyone has turned up to see you receive your reward for completing the game. All that's missing is a roaring wookiee.

35 YEARS 35 GAMES

ZX SPECTRUM



MORE THAN 10,000
GAMES HAVE BEEN RELEASED
FOR THE ZX SPECTRUM AND
THAT NUMBER GROWS EVERY SINGLE
YEAR. AS IT CELEBRATES ITS 35TH
ANNIVERSARY, MARTYN CARROLL SELECTS
A KEY TITLE FROM EACH YEAR, FROM
1982 TO TODAY, HIGHLIGHTING THE SHEER
DURABILITY OF THIS DIMINUTIVE MICRO

1982 THE HOBBIT

DEVELOPER: BEAM SOFTWARE GENRE: TEXT ADVENTURE

Were it not for *The Hobbit* the Spectrum's first year would have been forgettable as far as gaming goes. The reason for the lack of quality software early on is clear: the Spectrum officially launched in April 1982, yet Sinclair struggled to meet demand with some waiting for months for their machines to arrive. These delays meant that there wasn't a great deal of games software available this year, decent or otherwise. Quick arcade clones were the order of the day, and it was obvious that many were hastily updated versions of existing ZX81 releases. Sinclair's own label published some early hits like *Space Raiders* and *Hungry Horace* but they were simple, fleeting affairs. This begs the question: how did Philip Mitchell and Veronika Megler, authors of *The Hobbit* text adventure, create such a sophisticated title and have it ready so soon after the Spectrum's launch?

The pair actually began developing the game on the Tandy TRS-80, but when Beam Software witnessed the clamour for the Spectrum it shifted the development over. An added benefit of the move was that it allowed for colour location graphics to accompany the text descriptions. These images will evoke memories for many gamers, as they were slowly sketched on screen

and then painstakingly coloured in, line by line. But for fans of interactive fiction, behind the crude graphics lay an engrossing adventure. *The Hobbit* was ahead of its time, introducing an intelligent parser, non-playable characters and non-linear progression years before it became commonplace.

Tolkien, who famously wrote his tomes by hand, would have been baffled by this game, for sure. Yet the idea of readers being able to explore his world at will would have surely satisfied him.



ON SPEC

VERONIKA MEGLER

The Spectrum developer talks Tolkien

On the Spectrum

It was sleek, very obviously aimed at the home market. It was a good game-playing machine. We did all our development on the TRS-80 which was more focused on the business market.



On developing *The Hobbit*

We knew we were taking the current state of the art a leap forwards. But we got so caught up in the building of the game we didn't think about that much. We talked more about design and the challenges of debugging something so complex. The 'English' environment was more structured and testable, while the randomness of the NPCs and the game engine made testing that a real challenge.

On the impact of *The Hobbit*

I'm still astonished and humbled when I hear the impact *The Hobbit* had on peoples' lives, and on other gamers and developers who came after. Playing the game had far more impact on their lives than developing the game had on mine!

1984 THE LORDS OF MIDNIGHT

DEVELOPER: MIKE SINGLETON GENRE: STRATEGY ADVENTURE

Ultimate carried on where it had left off, releasing several more Spectrum classics this year including *Atic Atac*, *Sabre Wulf* and the groundbreaking *Knight Lore*. Any one of those was a contender for 1984's best game, as were Graftgold's *Avalon* and Microsphere's *Skool Daze*, but there's one title that comes out on top for being both technically brilliant and brilliantly fun.

The Lords Of Midnight, developed by Mike Singleton and published by Beyond, was so advanced that it made *The Hobbit* look like a type-in listing. Featuring 4,000 locations (all depicted

visually, thanks to Mike's inventive 'Landscaping' system), dozens of playable characters and multiple ways of seizing victory, this sprawling strategy adventure shouldn't really have been possible on the Spectrum with its limited hardware and meagre 48K memory. But Mike brought the land of Midnight to life and everyone who trekked, battled, cowered and bluffed their way across its icy wastes will know that *The Lords Of Midnight* was simply peerless on release. Even the follow-up, 1985's *Doomdark's Revenge*, struggled to top the seminal original.



1983 JETPAC

DEVELOPER: ULTIMATE GENRE: SHOOT-'EM-UP

'From famine to feast': that sums up 1983 basically. The Spectrum was suddenly everywhere, with Sinclair reportedly selling half a million machines by August 1983. The userbase exploded and so did the number of amazing games available. Sandy White's *Ant Attack* pioneered the isometric adventure while Matthew Smith's *Manic Miner* redefined the platform game. And then a brand-new outfit from the Midlands went and produced the purest arcade experience yet on the Spectrum.

Jetpac was the debut offering from Ultimate Play The Game, the software house that would dominate

the Spectrum's early years. There were many single-screen shooters around at the time, but this was just so polished, so professional, that it could have come straight out of the arcades. The objective of warily refuelling your space rocket while blasting aliens was simple yet compulsive. Yes, colours clashed and sprites flickered but there's arguably never been a better example of a pick-up-and-play game for the Spectrum – and it still holds up today. *Jetpac* was just the beginning for Ultimate: *Pssst*, *Cookie*, *Tranz Am* and *Jetpac* sequel *Lunar Jetman* all arrived before the year was out.



ENGAGED TO ENEMY

1985 CHAOS

DEVELOPER: JULIAN GOLLOP GENRE: TURN-BASED COMBAT

With each passing year more and more amazing games were made available for the Spectrum. 1985 saw the release of many fan favourites including *Fairlight*, *Saboteur*, *Cyclone*, *Highway Encounter* and *Tau Ceti*. This was also the year that Acornsoft's all-conquering *Elite* finally docked onto the Spectrum and easily justified the hype surrounding it.

In comparison, *Chaos* was not a game that people were waiting for. Creator Julian Gollop was hardly known and publisher Games Workshop was better known as a developer of board games than computer games. The game's appearance certainly didn't help sell it in the press, thanks to the sparse black backgrounds and tiny, twitching sprites. But if there was ever a game where its design triumphed over graphics then *Chaos* was it. Up to eight warring wizards battled it out on the 'Plane Of Limbo', taking turns to unleash their spells and be the last sorcerer standing. The spells were randomly apportioned, so every game played out differently.

Julian had been developing the game for years, initially as a board game played between friends, so the computer version was impressively deep and perfectly balanced. And when eight human players were locked in battle, hurling gold dragons and gooey blobs around the place, it was, well, chaos.

The game might not have been a hit when first released but over the years it has attracted a devoted following. Many will have discovered it retrospectively thanks to *Your Sinclair* magazine, which included it on two separate cover tapes in 1990 and 1993. The magazine billed it as a "true classic" and it's impossible to argue with that.



ON SPEC JULIAN GOLLOP

The legendary designer talks about *Chaos*

On creating *Chaos* as a computer game

I was able to add an extraordinary game mechanic – the illusion system. The idea was that you could summon a creature as an illusion and they would behave as normal but they could be 'disbelieved' by any other player. I still saw *Chaos* as primarily a multiplayer game, but the AI proved to be pretty cool – something you can't really do for a board game. Many players loved to play a co-op game against the AI wizards before turning on each other.

On the Spectrum

The Speccy was absolutely essential for my career. For strategy games it was great because you had a whopping 48K available and it was cheaper than the alternatives. Not only was I able to persuade my parents to buy me one but I was able to make fairly sophisticated games for it. And the ZX microdrives never let me down!



1986 TURBO ESPRIT

DEVELOPER: DURELL SOFTWARE GENRE: DRIVING

In this year Sinclair launched the Spectrum 128, a new model that was supposed to usher in the next generation of Speccy games. That didn't happen, of course, as most publishers were happy to continue releasing standard 48K games with some token 128 improvements (Rainbird's *Starglider* and Mastertronic's *Knight Tyme* were two early exceptions). It didn't matter too much as the flow of amazing 48K games continued with gems like *The Great Escape*, *The Trap Door* and *Quazatron*.

Turbo Esprit from programmer Mike Richardson was another title that showcased what could be achieved on the bog-standard Speccy. It was essentially an 8-bit prototype of *Driver* from Reflections, presenting 'living' 3D cities which you could

freely navigate. The objective was to catch drug runners but for most players there was joy in simply driving around, obeying traffic lights, zebra crossings, junctions and the general rules of the road – or more likely, flouting them. Even now, we feel desperately sorry for those little guys on their ladders, just going about their work.



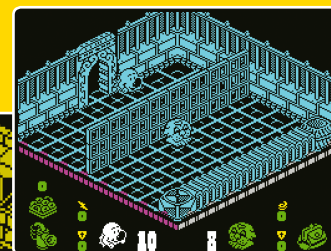
1987 HEAD OVER HEELS

DEVELOPER: OCEAN SOFTWARE GENRE: ISOMETRIC ADVENTURE

Isometric adventures were hugely popular on the Spectrum. Ultimate showed with *Knight Lore* and *Alien 8* that the Spectrum's processor had the grunt to make isometric presentation work well, and then pretty much everyone else followed its lead. Games like *Sweevo's World*, *Movie* and *Batman* not only optimised the technique but also added their own unique traits and quirks. This progression peaked with *Head Over Heels*.

Jon Ritman and Bernie Drummond's follow-up to their *Batman* game may have lacked a popular licence but it was strong enough to succeed on reputation alone. Its key feature was to introduce two playable

characters, with their own strengths and weaknesses, which you could flick between. And when reunited (which was the game's first task), you could join them up and take on the evil Blacktooth Empire together. *Head Over Heels* was cute, clever, devious and delightful. The graphics and animation were excellent and so was the sound (on the 128K version at least). All in all, this was an instant Spectrum classic and yet another hit for Ocean which was finding form after a few uneven years.





1988 R-TYPE

DEVELOPER: SOFTWARE STUDIOS GENRE: SHOOT-'EM-UP

By this point the Spectrum market was becoming increasingly dominated by coin-op conversions. That was not necessarily a bad thing, as there had been genuinely excellent attempts (*Bomb Jack* from Elite, *Renegade* from Imagine, and *Bubble Bobble* from Firebird being just three). Yet the whole circus surrounding US Gold's hopelessly optimistic version of *Out Run* did leave a sour taste behind.

Hopes weren't particularly high for the Spectrum version of *R-Type*. How could anyone conceivably take the hottest shooter in the arcades, with its crazy array of weapons and

screen-filling bosses, and squeeze it all onto the Speccy with any degree of accuracy? Programmer Bob Pape somehow managed it, delivering not only the number one coin-op conversion for the Spectrum but also one of the best games for the machine period. Some suspect witchcraft was involved in pushing the Spectrum to its absolute limits, but by reading the story behind *R-Type* in Bob's free PDF book *It's Behind You*, you'll discover that he was a meticulous coder who chewed through problem after problem and simply wouldn't settle for second best. An absolutely sublime conversion.

1989 MYTH

DEVELOPER: CONCEPT ANIMATIONS GENRE: ADVENTURE

This was the year of *Robocop*. Ocean's blockbuster film tie-in was released at the end of 1988 and dominated the sales charts throughout 1989. With such emphasis of licensed properties games, like *Myth*, were easy to overlook. But not here, not now.

Myth was basically a traditional arcade adventure dressed up to the nines. You played a young boy travelling through time, solving clever puzzles in order to defeat demons and dragons and other mythical beasts. Each stage was almost like a spectacle that kept unfolding, and the whole thing was enlivened by the most fantastic

graphics and animation (the driving rain and lightning strikes on the Viking stage were like something from a 16-bit title). The controls were a bit iffy (pressing down to jump?), and the shoot-'em-up finale felt bolted on, but overall *Myth* was an experience that felt like it had been crafted with great care and attention. It was the kind of game you'd imagine Ultimate would be making had it not quit the Spectrum scene.



1990 RAINBOW ISLANDS

DEVELOPER: GRAFTGOLD GENRE: PLATFORMER

Colour clash was the Spectrum problem that never went away and one of the most common ways of avoiding it was to opt for a two-colour display. This resulted in too many monochrome titles that didn't clash but looked plain drab. Clearly this wasn't an option for *Rainbow Islands*, as doing it in monochrome would have caused an outcry (and possibly contravened the UK's Trade Descriptions Act in some way). After all, this was a conversion of a coin-op that was almost incandescent.



The Spectrum version was handled by Graftgold which made the most of the Spectrum's vibrant palette, throwing reds, yellows, cyans and magentas all over the place. The criminally overlooked 'bright' variants were also splashed about. Obviously, the character sprites and the rainbows themselves couldn't be multi-coloured on the Spectrum, but otherwise this was a bright and beautiful game. It played really well, too, and featured all of the content from the coin-op (bar the three secret islands, as per most of the home conversions). The game also performed admirably, barely slowing down even when the screen was really busy, and was enhanced for 128K machines with AY tunes and effects being the main addition.

Rainbow Islands was published by Ocean which was enjoying another strong year, particularly with its coin-op conversions. In addition to *Rainbow Islands* it also published excellent versions of *Midnight Resistance* by Special FX and *Pang* by Arc Developments. Towards the end of the year Ocean announced that it would focus on 128K-only games going forward. Would this decision spell the end for the trusty 48K Spectrum?

ON SPEC STEVE TURNER

The developer looks over the rainbow

On developing *Rainbow Islands* at Graftgold

The rainbows were a particular problem as they were huge colourful sprites. The game did not suit the Spectrum, but programmer David O'Connor did a brilliant job. He was determined to get the gameplay elements correct so it played just like the original. He invented a way of packing the maps so he could squeeze the data into the Spectrum's memory. He also understood the key to playability was a high framerate.

On the Spectrum

The Spectrum was an essential element to the beginning of Graftgold. At the time there was no other machine that sold in the numbers required to give a userbase big enough to make games development viable. It was cheap and easy to develop for. It was all down to programming techniques, rather than finding tricks with chips. Everything had to be built from the ground up, giving a good standing for more complex machines.



1991 SPELLBOUND DIZZY

DEVELOPER: BIG RED SOFTWARE GENRE: ADVENTURE

Owners of 48K models needn't have worried about Ocean's decision to overlook them as most publishers continued to support the original machine. This was particularly true of the budget publishers who began to pick up the slack as the number of full-price releases noticeably declined. Codemasters was the king of budget publishers and *Dizzy* was its prince. This, the fifth in the main *Dizzy* series, was his biggest adventure yet with 105 screens in total (the original *Dizzy* had 52 screens in comparison). It was also one of the best in the series, featuring some strong puzzles and fun sequences including a mine cart ride. It was best played on a 128K machine as it included AY music and extra character

animations, but the whole adventure run perfectly on the standard 48K iteration of the Speccy.

This year also saw a couple of high-profile 16-bit releases ported down to the Spectrum in *Lemmings* and *North & South*. Both were decent versions and showed that the Speccy was still a viable platform for the latest hits.



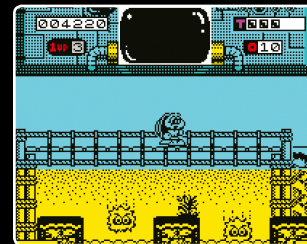
1992 TURBO THE TORTOISE

DEVELOPER: VISUAL IMPACT GENRE: PLATFORMER

Another year where budget titles outshone full-price releases. Ocean's *Space Gun* and *The Addams Family* were pretty solid, as was US Gold's *Indiana Jones And The Fate of Atlantis*, but the big publishers were clearly focusing on the 16-bit market now. Codemasters was still reliably cranking out budget games like *Captain Dynamo* and *Wild West Seymour*, yet it was this brilliant little platformer from Hi-Tec Software that stood out.

Turbo The Tortoise was obviously riffing heavily on *Sonic The Hedgehog*, although the game had more in common with *Super Mario Bros.* in terms of gameplay and presentation. As Turbo, you bounded through six horizontally-scrolling stages, disposing of baddies by jumping on their

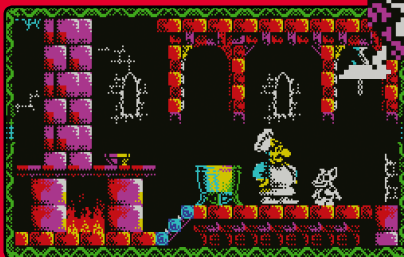
heads (or shooting them with a handy gun). Waiting at the end of each stage was a large boss which you had to defeat, and there were a number of bonus levels to find, too. *Turbo The Tortoise* was release twice – first by Hi-Tec, which went bust soon after, before being picked up and put out again by (guess who...) Codemasters.



1993 DALEK ATTACK

DEVELOPER: 221B SOFTWARE GENRE: PLATFORMER

In the UK releases reduced to a trickle this year. The titles were Nigel Mansell's *World Championship* from Gremlin and this, Alternative's long-awaited *Doctor Who* game (which was due out in 1992 but kept slipping). Bizarrely it was a run-and-gun platformer but it was fast and mostly fun. *Dalek Attack* was the last game to feature on the cover of *Your Sinclair* magazine which closed this year, along with *Sinclair User*.



1994 TOWDIE

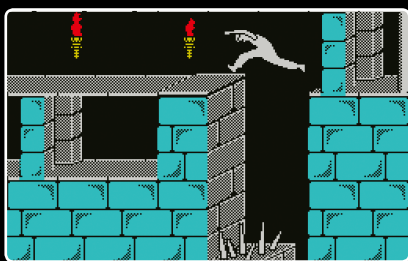
DEVELOPER: THE BALARA BROTHERS GENRE: ADVENTURE

While the Spectrum was effectively finished in the United Kingdom, this was not the case elsewhere. Ultrasoft, from the former Czechoslovakia, continued to release commercial titles in Central Europe, including the puzzle game *Quadrex* and the arcade adventure *Towdie*. Although heavily indebted to the *Dizzy* series (of where there were many unofficial mods), *Towdie* was a great-looking game in which you played a tiny troll on a mission to slay a dragon.

1995 TWILIGHT

DEVELOPER: ULTRASOFT GENRE: POINT-AND-CLICK ADVENTURE

Subtitled *Land Of Shadows*, this was another impressive release from Ultrasoft that successfully implemented a point-and-click adventure on the Spectrum. You play an astronaut returning to a barren Earth in the distant future. It doesn't feature too many locations and can be finished quickly, but it was an admirable achievement. A version of the game with the text translated into English was later released.



1996 PRINCE OF PERSIA

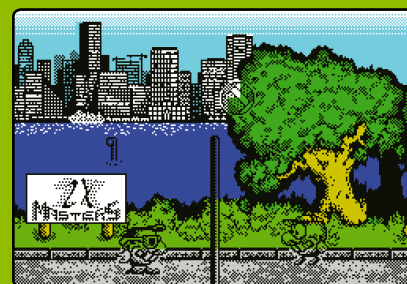
DEVELOPER: ENTROPY GENRE: PLATFORMER

This story behind the belated release probably needs its own article. Having converted Jordan Mechner's hit game to the SAM Coupe, the programmers shopped around a Spectrum port in 1993 but there were no takers due to the shrinking market. Three years later this version was somehow acquired and sold commercially in Russia! It really is a great version of a classic game, and such a shame it wasn't put out properly in 1993.

1997 BLACK RAVEN

DEVELOPER: COPPER FEET GENRE: REAL-TIME STRATEGY

The Spectrum remained hugely popular in Eastern Europe and there was strong demand for new software. This RTS game from Russian developer Copper Feet was definitely not *Stonkers*, being based instead on *Warcraft*. Despite the monochrome graphics, it played really well and was popular enough to spawn a mission disk and an isometric sequel (which sadly never progressed beyond a demo).



1998 HEADBALL

DEVELOPER: ZX MASTERS GENRE: SPORTS

This was a fairly lean year in Spectrum land with just a steady flow of Russian games to keep things ticking over. The highlight of the year's output was this entertaining sports game from ZX Masters. Featuring nice chunky sprites and colourful animated backdrops, two players headed a ball (and later a bomb!) back and forth over a net, trying to keep it in the air for as long as possible. Not sophisticated, but a lot of fun – with some nice AY tunes.

1999 TITANIC

■ **DEVELOPER:** FATALITY
■ **GENRE:** PUZZLE

Or *Pussy: Love Story From Titanic* to give the game its full, inexplicable title. This Russian oddity was themed around James Cameron's movie, yet the two players were based on Leonardo DiCaprio and Kate Winslet rather than their characters! The game was based on the little-known Japanese puzzle game *Magical Puzzle Popis* which was released for the Game Gear in 1991. Wait... are those *Dragonball Z* sprites we see!



2000 EXISTENZ

■ **DEVELOPER:** TRIUMPH GAME LABS
■ **GENRE:** SHOOT-'EM-UP

It would be remiss of us not to highlight some mods. *Existenz* was an unofficial update of *Delfox*, the 1988 horizontal shooter from Spanish developer Dinamic Software. In fact, the game is also known as *Crazy Delfox* and that gives you an idea of what's going on here. The Russian dev team took the original game and ramped up the action to manic proportions and then underlined everything with a thumping AY soundtrack.



2001 ONE MAN & HIS DROID II

■ **DEVELOPER:** CLIVE BROOKER
■ **GENRE:** MAZE GAME

According to World of Spectrum, there were fewer games released this year than any other. Still, a total of 43 titles arrived in 2001, including this previously unreleased sequel. Clive Brooker wrote his follow-up in 1991, but Mastertronic wasn't interested in publishing it, so he shared it on the web. And we should thank Clive, as it's a sequel that deserves to be played.



2002 ZX HEROES

■ **DEVELOPER:** IGOR MAKOVSKY ■ **GENRE:** PLATFORMER

There have been dozens of *Jet Set Willy* mods over the years, with the number increasing following the initial release of John Elliott's popular JSWED tool in 1996. Where as previously the mods simply added new screens for the intrepid Miner Willy to explore, the new editor introduced changes to the way many game elements worked, leading to more sophisticated room layouts for players to negotiate.

This 40-room mod from Igor Makovsky is one of the very best and needs to be experienced. It's basically a respectful tribute to some of the greatest games from the Spectrum archive including *Pyjamarama*, *Technician Ted* and *Dynamite Dan*. Some classic arcade conversions get a look in too, namely

Bubble Bobble and *Arkanoid*. Imagine a bunch of classic game characters crashing a party in Willy's mansion and you get the idea. Another impressive Speccy release this year was *Abe's Mission: Escape*, a version of the first two *Oddworld* games which was the winning entry in the Your Game 2002 competition.



ON SPEC IGOR MAKOVSKY

The Spectrum superhero stops by for a chat

On growing up with the Spectrum

A Soviet Spectrum clone (Kvant BK) was my father's present to me when I was six years old. Loading tapes, playing games, trying my first attempts at coding are deeply connected with sweet times spent together with my dad.

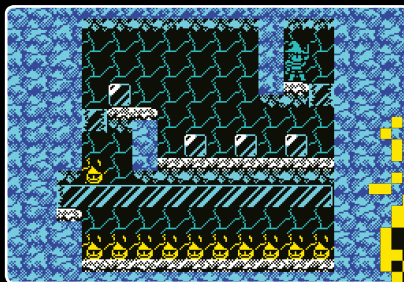
On the popularity of *Jet Set Willy* clones

It's easy to create a whole world with custom animations and an interesting,

non-linear story with the right editor, like the amazing JSWED.

On creating *ZX Heroes*

Jet Set Willy games have a unique rhythm. It's not too fast and not too dynamic – cosy and enjoyable to play with a cup of tea! I'm fond of making tributes and many games inspired me when creating *ZX Heroes*. The *Doom 3* beta was released that year and I wanted to show that we can keep Spectrum games in our hearts.

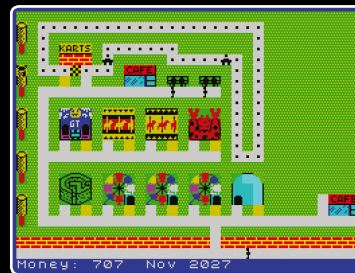


2003 FIRE 'N ICE

■ **DEVELOPER:** N-DISCOVERY
■ **GENRE:** ARCADE PUZZLE

Tecmo's arcade puzzle *Solomon's Key* was ported to many home systems including the Spectrum in 1987. *Fire 'n Ice* was the follow-up in which players had to extinguish the flames using blocks of ice. It was released for the NES in 1992 – until Russian group n-Discovery created this unofficial port for the 128K Spectrum.

This is perhaps the first title to open peoples' eyes to the Spectrum homebrew scene. Graphics and sound are top-notch and the design is perfect. All in all it's a gorgeous game that everyone should try out.



2004 FUN PARK

■ **DEVELOPER:** JONATHAN CAULDWELL
■ **GENRE:** SIMULATION

Jonathan Cauldwell is known to many fans as a prolific creator of homebrew, releasing dozens of games over the past 15 or so years. *Fun Park* is one of his most ambitious titles, being a demake of Bullfrog's *Theme Park* that runs

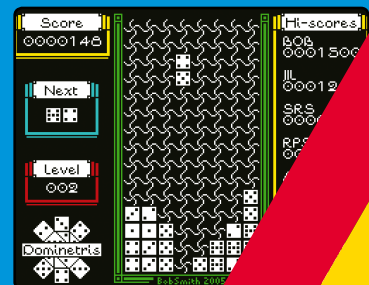
on a 16K Spectrum. The original version, a minigame competition titled *Amusement Park 4000*, was even more remarkable, running in just 4K! But *Fun Park* is much more than an example of what can be achieved in limited memory.

2005 DOMINETRIS

■ **DEVELOPER:** BOB SMITH ■ **GENRE:** ARCADE PUZZLE

In Bob Smith's *Dominetris* you have to arrange falling dominoes so that the digits match, and then align the corresponding number of blocks to make them disappear from play (i.e., you need to place five fives together, and six sixes). It's simple stuff but quickly gets

fraught as the screen starts to get cluttered. As Spectrum *Tetris* clones go this is easily one of the best. Bob would go on to create a name for himself in homebrew circles, and in 2010 he'd create an expanded version of *Dominetris* – for the ZX81, no less!





ON SPEC

JONATHAN CAULDWELL

The developer on his love for the Speccy Scene

On his favourite creation

Most of them have something going for them. The title which I'm most proud of is *Encyclopaedia Galactica Remixed*, which sees the player flying around different star systems and collecting samples of alien life to document for the eponymous tome.

On the Spectrum scene

Dozens of new games are created every year with new authors appearing to write the game they wanted to as a child. It's great to see

so many people interested in learning Z80 assembler or using Churrera or Arcade Game Designer in different ways to create new titles. The quality is high and some of the games developed over recent years would have received rave reviews in the Eighties. Interest in developing new games just keeps growing and I have no plans to stop any time soon.



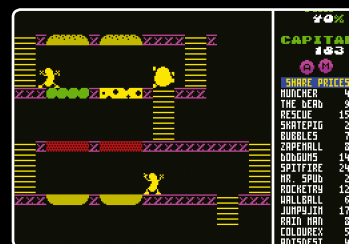
2006 GAMEX

DEVELOPER: JONATHAN CAULDWELL GENRE: MINIGAME COLLECTION

Another one from Jonathan Cauldwell and this was probably his most intriguing and ambitious game to date. We say 'game' when this is actually a collection of 16 minigames based on classic arcade concepts (although to refer to them as mere clones is doing them a disservice, as there are some brilliant little challenges included).

Rather than just be a collection of titles, the games are all connected by the unique 'Games Exchange' element where you buy and sell shares in the games on offer. So you begin by building up some of your capital by playing a *Pac-Man* variant and then invest this in other titles of varying difficulty, using your own game-playing skills to amass more and more resources. You'll need to watch out for

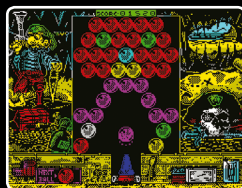
tax (too many penalties and it's game over), but more importantly you need to keep your eye on the time as it's easy to lose track of it when you are wheelin' and dealin' on *GameX*. The stock market shenanigans returned for a sequel, subtitled *Playing Dividends*, which was released in 2015



2007 CANNON BUBBLE

DEVELOPER: COMPUTER EMUZONE
GENRE: PUZZLE

Spanish team Computer Emuzone produced some strong demakes this year, including the *Bejeweled* clone *Betiled*. But in terms of retro appeal you can't beat *Cannon Bubble*. Featuring pirate-themed graphics and a jaunty soundtrack, this is a game that does everything right. It even includes a two-player mode so you can go head-to-head against a friend.



2008 SPLATTR

DEVELOPER: BOB SMITH
GENRE: SHOOT-'EM-UP

Massive graphics and no colour clash? That doesn't sound like the Speccy. Yet if the sprites are built using character squares then the attributes can't clash. Based on this observation (which is reflected in the title - *ATTR* is the attribute command in Sinclair Basic), Bob Smith created this unique shooter where you blast huge sprites that fill the screen. This is one of those games where static screenshots simply don't do it justice.



2009 KING'S VALLEY

DEVELOPER: RETROWORKS
GENRE: PLATFORMER

The MSX library is littered with Speccy ports, so it's nice to see it work in reverse sometimes. This conversion of Konami's platformer from Spain's RetroWorks is a joy to play. Think *Lode Runner*, only here you're



raiding pyramids for treasure. As you'd expect from RetroWorks the presentation is spot-on, featuring impressive graphics and AY tunes.

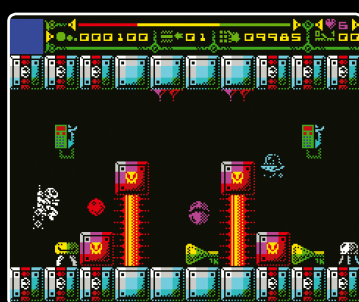


2010 HORACE IN THE MYSTIC WOODS

DEVELOPER: BOB SMITH
GENRE: PLATFORMER

Horace was a mascot for the Speccy, appearing in three beloved titles. A fourth game was canned in 1985 but that wasn't the end. In 1995 Psion hired Michael Ware to write *Horace In The Mystic Woods* for the Psion 3 PDA and 15 years later Bob Smith ported the game to the Spectrum.

Horace's return was the highlight release of this year. The original version was monochrome, but on the Spectrum all 64 screens of platforming action are daubed with lovely colour. The controls are excellent, as is the sound. It's good to have you back, Horace.



2011 CRAY 5

DEVELOPER: RETROWORKS GENRE: SHOOT-'EM-UP

This was the strongest year yet for homebrew releases, with a glut of great games arriving. *Cray 5* takes the crown for being charming, challenging and just brilliant.

The game was originally developed by Topo Soft in 1987 and released for the Amstrad CPC. Topo Soft did release a number

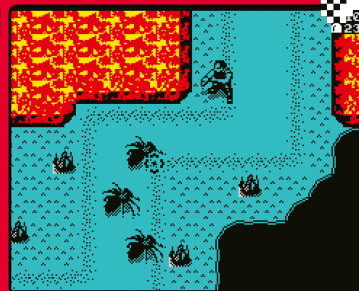
of games for the Spectrum but *Cray 5* was not one of them. Thanks to RetroWorks, this oversight has been corrected - with some style. It looks amazing, resembling a Raffaele Cecco game, and the AY soundtrack is fantastic. Overall it's a clear cut above the CPC original.

2012 SURVIVISECTION

DEVELOPER: SANCHEZ GENRE: SHOOT-'EM-UP

Another year where it's hard to select the best game. *Survivisection* from Sanchez (Aleksander Udotov) has to be singled out, though, for taking the theme of *Commando* and taking it further than anyone thought possible on the Spectrum.

Rather than control your soldier directly you use a pointer to select where he moves and fires. And it's not about shooting everything, as there's a degree of strategy and puzzling, too. Plus it looks great, featuring full colour and full-screen scrolling.





2013 BRUNILDA

DEVELOPER: RETROWORKS
GENRE: GRAPHIC ADVENTURE

In this *Zelda*-style adventure you play a monk on a pilgrimage who seeks shelter for the night in a village – and it turns into a long night indeed as a mystery unfolds and you're called on to converse with the locals and explore the surrounding forests and caves.

This is a pure graphic adventure with no battles, and the emphasis is on story, and the adventure system, with its colourful environments and eight-way scrolling, is exceptional. It's long and involving but it's split into several chapters.



2015 CASTLEVANIA: SPECTRAL INTERLUDE

DEVELOPER: REWIND
GENRE: ADVENTURE

You could say that the games in this list have been leading to this moment, when in 2015 Aleksander Udotov unveiled his version of *Castlevania* for the Spectrum 128K. It was a significant moment, as word of this title spread far beyond the usual circles. For a while it seemed that everyone was talking about *Spectral Interlude*: the detailed graphics, the incredible 12-song soundtrack, and the fact that this was *Castlevania*, in all its whip-cracking, vampire-slaying glory, on the Spectrum.

The game actually started out as a Spectrum version of the NES game *Castlevania II: Simon's Quest* but soon emerged as an original, 150-screen adventure that stands proudly on its own.

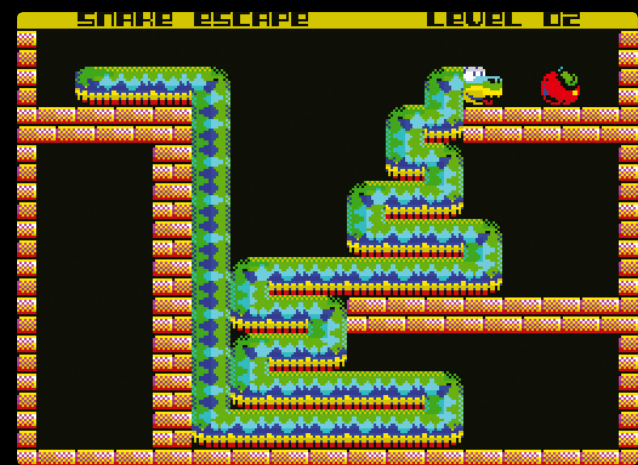
2014 METAL MAN RELOADED

DEVELOPER: OLEG ORIGIN GENRE: SHOOT-'EM-UP

There was a time when *Robocop* was held up as one of the most impressive games on the Spectrum. Fast forward 25 years and we have *Metal Man*, who stomps all over poor Murphy. The design is similar to Ocean's hit but the graphics are, well, just look at them. There's no monochrome drabness

here, oh no. Like many of Ocean's titles, it's a mix of styles, with on-foot shooting with puzzle sections and a nifty motorbike sequence.

If you're wondering about the title, the original *Metal Man* was originally released by Oleg Origin in 1997 on a Russian compilation disk.



2016 SNAKE ESCAPE

DEVELOPER: EINAR SAUKAS GENRE: PUZZLE

Perhaps fuelled by the success of *Spectral Interlude*, 2016 turned out to be a golden year for releases. Highlights include the adventure game *Sam Mallard*, the *Boulder Dash* update *Tourmaline*, and unique driving/action/puzzle thing *Car Wars*. And not forgetting *The Dark*, the *Doom* clone from Oleg Origin (which was another update of one of his experiments).

Our top choice is *Snake Escape*, Einar Saukas' version of the popular online game *Lime Rick* in which you guide a snake to the apple using its own coiling body as a platform. You'll

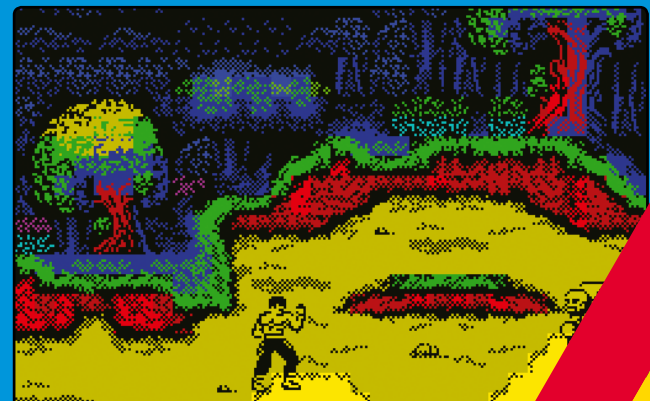
notice that the graphics (by Jarrod Bentley) are a lot more colourful than usual and that's because the game uses Einar's own *Nirvana Engine*, a software solution to the Speccy's limited colour resolution which lets you have up to eight colours per character square. It's a truly impressive effect and it works on any standard Spectrum. Several other *Nirvana* games, including *Dreamwalker*, *Multitude* and *Stormfinch*, have been released previously and *Snake Escape* continues this trend for hyper-colourful Spectrum games.

2017 AND BEYOND...



This year is already looking like a promising one for new releases. Some nice arcade platformers have already been released in the first half of the year including *The Ship Of Doom* from Mat Recardo, *Foggy's Quest* from John Blythe, and *Ooze* from Andy Johns. Looking ahead, both Jonathan Cauldwell (*Egghead 6*) and Bob Smith (*SokoBAArn*) are busy with new developments. The one we're most looking forward to is *No Fate* (pictured), an arcade-style brawler from the same team behind *Castlevania: Spectral Interlude*.

The release of the Spectrum Next device at the end of year will signal the arrival of more fresh games, including some 256-colour ones like *Baggers On Ladders* from Jim Bagley and *Nodes of Yesod Next* from Steve Wetherill. There's also *Wonderful Dizzy* from the Oliver twins and friends, which was initiated when a stretch goal for the Next Kickstarter campaign was met. Which of these games will be the best of 2017, and what can we expect in future years following the debut of the Next? We can't wait to find out.



THE KINGS OF

DONKEY



HIGH SCORE HEROES



**WES
COPELAND**



**ROBBIE
LAKEMAN**

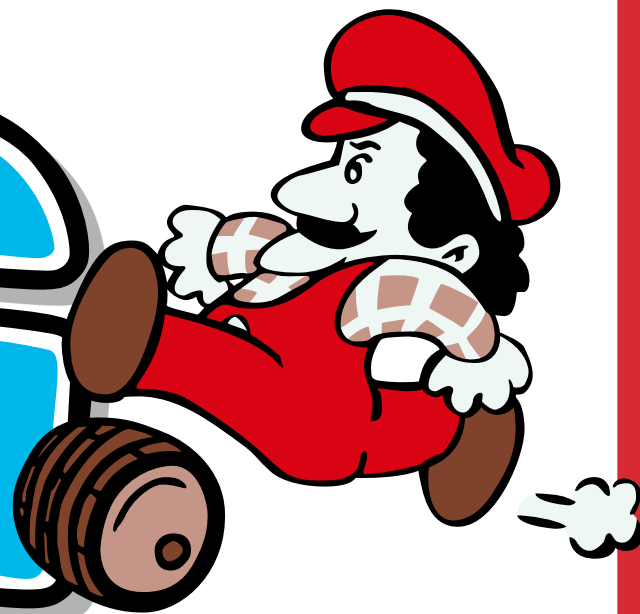


**STEVE
WIEBE**



**BILLY
MITCHELL**

KONG

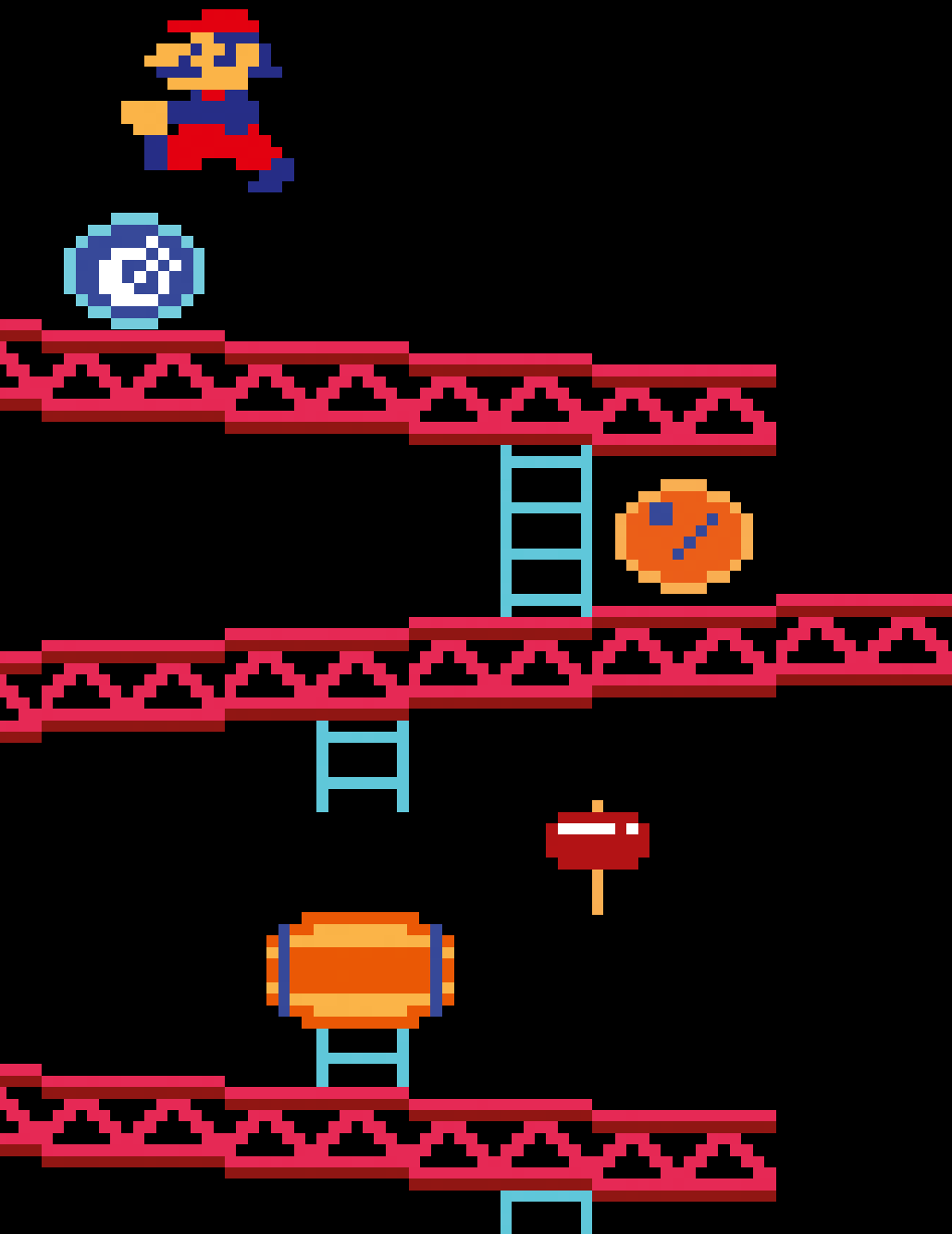


Ten years after the release of the film *The King Of Kong*, the battle for the high score on *Donkey Kong* is as intense as ever. Paul Drury talks monkey business with the key players

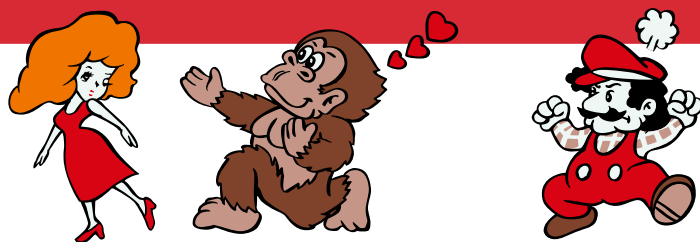
Billy Mitchell leans towards us and stares directly into our eyes. "You're saying somebody stole my thunder? Listen, I got a *Donkey Kong* kill screen in 1982 and no one did that again until the turn of the century. It was that achievement that began this whole hoopla. It was why the film was made and it led to the revival of competitive videogame playing... do you think anybody sits on top of *Donkey Kong* more than me?"

Whoops. Maybe it was a mistake to ask the most recognisable man in classic arcade gaming how it felt to no longer be the King Of Kong. He has a point, though. Once known as the first player to score the 'perfect game' on *Pac-Man* (an achievement not without controversy but that's another story), Billy Mitchell became synonymous with Nintendo's 1981 arcade hit due to his memorable turn as the 'villain' of the piece in the film *The King Of Kong*. Released in 2007, it portrayed Billy as a kind of evil overlord, directing goons to do his dirty work and crushing the plucky underdog Steve Wiebe, pretender to his crown, under the weight of his huge ego. We wondered just when Billy realised he was being cast as Darth Vader to Steve's Luke?

"They smoked that past me," he replies in classic Yankee fashion. "A friend told me what they had done [in the film] because, and I know people will want me to take a polygraph test before they believe this, I don't watch the films I'm in. The experience of making ►



DONKEY KONG



» The new kings with the old (l-r) Robbie Lakeman, Billy Mitchell and Wes Copeland



► it was tremendous, though. I don't have a problem playing the bad guy. I think I'm pretty good at it."

So was it all an act? We are talking to Billy at the Florida Freeplay pinball and videogame show and he undeniably has an onstage persona. Dressed in a tuxedo as immaculate as his hair, he is all swaggering bravado, posing for photos with his trademark raised thumb and lapping up the attention. Offstage, he is thoughtful, witty and even quite humble, a family man who talks fondly of the friends he has made through videogames far more than the fame it has brought him. Given the negativity that followed his appearance in the film, does he wish he had never got involved?

"During the filming, a lot of people I know turned to me as the one with wisdom and experience and asked, 'Hey, are these film-making guys okay?' and I said they were," he sighs. "That's why I feel an ass. I didn't feel anything bad would happen. When it came out, I phoned all the people that had been made to look stupid in the film, who had been called 'my minions', to apologise to them. That was a hard thing to do."

One of those supposed minions was Billy's old friend Steve Sanders. Steve appeared alongside Billy in the famous *Life* magazine photo taken outside the Twin Galaxies arcade in November 1982, featuring 16 high scoring champions next to their arcade machine of choice. Steve, author of *The Video Masters Guide To Donkey Kong*, is pictured leaning proudly over a *Donkey Kong* cabinet, thanks

"I don't have a problem playing the bad guy. I think I'm good at it"

Billy Mitchell

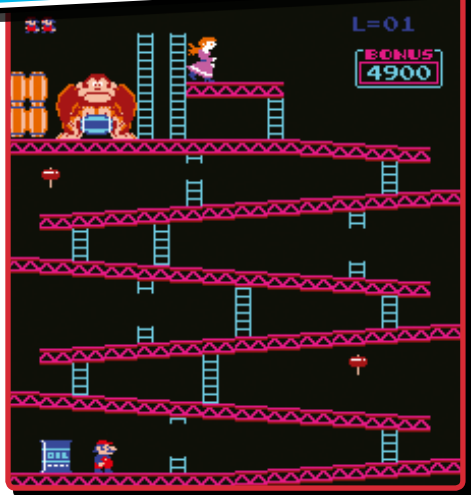
to his record score of 3,165,300. Hang on, that's almost three times higher than the current top score. Steve, are you the real King Of Kong?

No, I lied and cheated my way to fame," admits Steve with a resigned grin. "I desired the reputation of being the world's best gamer so much that I sacrificed my integrity to keep up appearances. I lied about my high score and it's one of the greatest regrets of my life. Billy should have been on that *Kong* machine, not me. The fact that he forgave me when I admitted it and became one of my best friends is testament to his character. The result was life changing. I never wanted anyone to perceive me as a liar ever again."

Being truthful is something Steve, a practising attorney at law, holds dear. He argues vehemently against the demonisation of Billy in the movie, pointing out how through judicious editing, wilful omission of key facts and a laissez-faire attitude to the actual sequence of events, the filmmakers twisted the narrative to cast him as the bad guy. "Take the part where Billy supposedly sends a 'squad' to Steve Wiebe's house

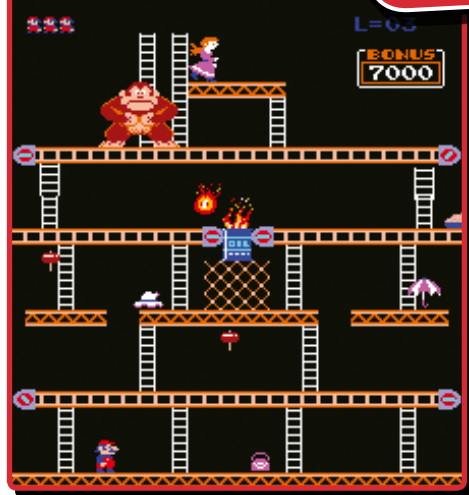
SO YOU WANT TO BE KING?

Current World Record holder Wes Copeland shares his high scoring tips



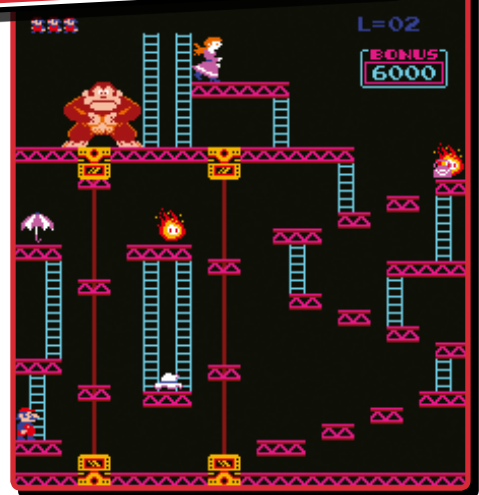
BARRELS

■ Don't go for the bottom hammer unless you're a very experienced player. The longer you stay on the screen, the more dangerous the barrel groupings get that you'll have to overcome. Rush to the top, grab the top hammer, and move on. Also, remember that it's possible to control many of the barrels on the screen with your inputs. They're more likely to go down ladders that you're walking towards.



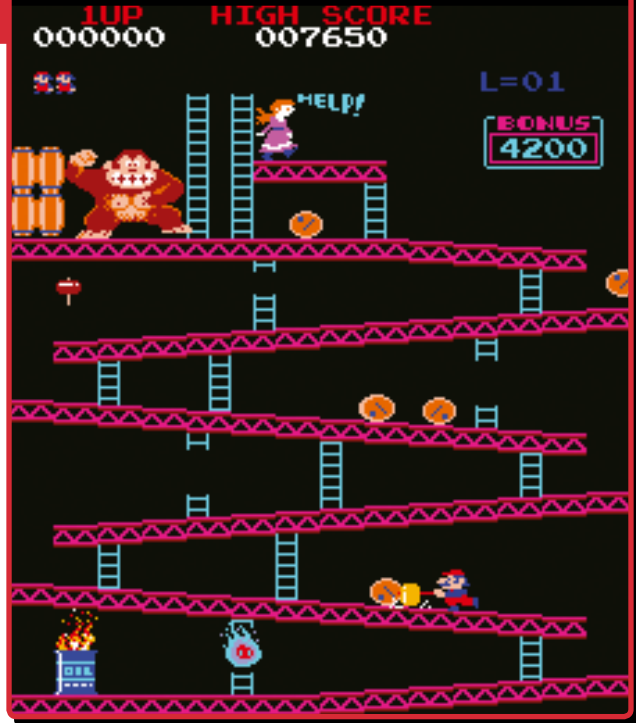
PIES

■ When the screen starts, it's best not to move until all the fireballs jump out of the oil can. You want them to jump out of the left, that way you have a chance to easily clear the screen on the right while they're out of the way. If the fireballs don't let you clear on the right, hang out on the bottom of the screen until they all go away. Once they're on the top with Donkey Kong, they can't come back down.



SPRINGS

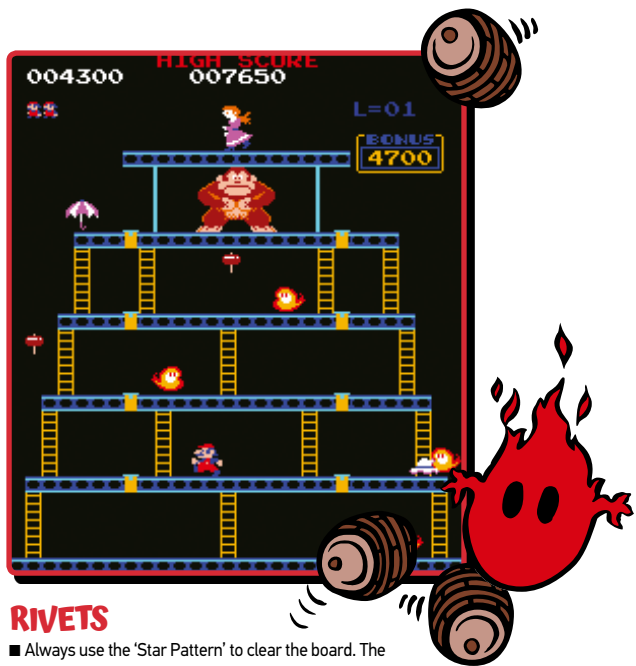
■ Learn to recognise the length of the springs. You can see this by watching where they bounce in relation to where Donkey Kong is standing. Notice they don't all bounce in the same spot. Some springs are long, others are short. The long springs (the ones that have their initial landing in between Donkey Kong's feet) are the springs that are deadly. Short springs are the ones that are safe to make a run for the ladder on!



to inspect his machine," he protests. "Bill never sent anyone and it was Steve's own mother who invited the gentlemen into the garage to play *Donkey Kong* while they waited for Steve to come home!"

Steve continues to point out many similar distortions and inaccuracies, from the fairly basic fact that one Tim Sczerby was the record holder rather than Billy Mitchell when Steve Wiebe started submitting his scores to Twin Galaxies for recognition, to juxtaposing shots that seem to show Bill ignoring his rival when in fact they had been chatting and joking together moments before. Given his current profession, has Steve ever considered prosecuting the offending filmmakers? "I still think it's one of the best documentaries ever made and I absolutely love it," laughs Steve Sanders. "Seth Gordon and Ed Cunningham [director and producer of *The King Of Kong* respectively] are master storytellers. They ▶

» Smashing barrels is an easy method to build your score up.



RIVETS

■ Always use the 'Star Pattern' to clear the board. The Star Pattern is a particular order for clearing out the first four rivets on the left. Get the lower one first, then work from the top. On the last remaining left rivet, you should be able to grab the hammer and run across. When you smash fireballs, they'll then respawn on the left and be trapped or zoned out so as to no longer be any threat.

THE KINGS OF DONKEY KONG

Q&A: STEVE WIEBE

The hero of *The King of Kong* looks back at the film and the continued obsession with *Donkey Kong*

How did you come to star in *The King of Kong*?

I met Ed Cunningham [the producer] in 2005 and he expressed an interest in my story. Back then, I was at a standstill with Twin Galaxies regarding my million score. I knew that my interactions with Roy Shildt were the reason I was under fire, but I felt I deserved a chance to prove myself. If the story could be told on film, then there was a chance of getting my scores recognised. It gave me a glimmer of hope.

Did you realise you were being cast as the hero and Billy Mitchell as the villain?

It wasn't until I first saw the film that I realised the film crew's perspective of Billy and me. Having lived through it all, it was strange seeing the story unfold on film. I felt the film crew did a good job of telling what was a very convoluted story in a concise way that people could relate to and care about. I realised that there was editing necessary to make the film fit the structure needed for the big screen but I didn't have a problem with that. I knew Billy would not be too happy, though.

Do you think the portrayal of him in the film was unfair?

I think both sides of the story were dramatised to some extent for entertainment value, so you could view that as unfair if you're trying to assess our true characters. I always took Billy's comments as tongue in cheek and thought he had a good sense of humour. I never thought of him as my enemy, I just felt there was some unbreakable wall that separated him from me because of the whole Roy Shildt factor. Today, we are very cordial and shake hands at events. We'll say a few words, but I haven't had a lengthy conversation with him about anything. Maybe one day we can sit back and talk about the movie and laugh.

Were you surprised at how well received the film was?

I first saw it at the True/False film festival. I remember the person in front of me playing air guitar to *You're The Best* and I thought it was cool how the audience was enjoying it. That was a fun summer, making the rounds to various theatres in several cities to see the film and do Q&A sessions.

You became quite the celebrity!

It was definitely a fun period of my life and looking back, it seems very strange that it happened to me. At the LA screening, I met Vince Vaughn and Tony Hawk. I also appeared on *The Late Late Show* with Craig Ferguson during that trip and met Sylvester Stallone there.



» Like many *Donkey Kong* masters, Steve Wiebe is a dab hand at *Donkey Kong Junior*, too.

I remember playing *Donkey Kong* at E3, going for the record in front of a cheering crowd, which was really cool. It seemed for a couple of years, there was always some invitation coming through for me to appear somewhere.

Your wife also appears in the film. How does she look back on that period of your lives?

My wife was patient during the whole time I was going for the record. There were times when she would be frustrated with my devotion to the game, but she got to experience things after the film that were fun. One of the highlights was going to the premiere of *Four Christmases* in LA because I had a cameo in the movie.

You continued to play *Donkey Kong* competitively for many years and almost won the first Kong Off. Could you ever reclaim the record?

With the current high score being so high, it's hard to imagine the record changing hands very frequently or at all going forward. If I rededicated my life to the game, I might be able to get that one-in-a-million game to break the record, but the cost is too high for me. I'm content with what I've accomplished, so I don't see myself making any run at the record. I love the fact that the film propelled the game into the limelight and even after so many years, new discoveries are being made on how to point press and push the limits of the game. It's pretty fascinating that a simple, old game still has some buried treasures to be found.

And finally, who do you think is the true King of Kong?

Not to discount all of the great *Donkey Kong* players today, but I would say Billy is the King because he mastered the game during the height of its popularity. I wish I could have played at that level back in 1981. It took me until 1990 to reach a kill screen, so I definitely admire Billy for his high scores back in the Golden Age of videogames.

DONKEY KONG

THE KONG OFF

Richie Knucklez, founder of the Kong Off competitive event, tells us how it started

What inspired you to organise the first Kong Off tournament?

There was this one guy in *The King Of Kong* movie, a friend of Steve Wiebe, who says, 'I would pay money to see Billy Mitchell play live against Steve.' It was like he was daring somebody to do it. So I made lots of calls and got the 12 best *Donkey Kong* players together... and we all had a really good time!

What are your abiding memories of that first event in 2011?

It's one of the reasons why I got divorced. I put six months of my life into organising that first tournament, getting a dozen machines restored and looking brand new, and it was just me. It was very stressful but I have great memories of that event and it was so dramatic. Steve Wiebe had to leave slightly early to catch his plane home and on his very last game, he took the lead! I put him on my shoulders and carried him around the arcade and he was high fiving everyone. And man, he was not light. It was before he lost a lot of weight and he was chunky. It wasn't easy, I tell ya!

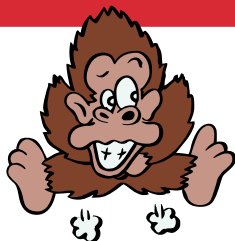
So Steve won the first Kong Off?

No, he was at the airport when we had to phone him and say Hank Chien had beaten his score!

Why do you think players are still battling to be the best at *Donkey Kong*?

It's all from that stupid movie! The film makers completely wrote Tim Sczerby, the guy who had actually beaten Billy's record, out of the story. They had to go with Billy because he knew how to play the villain. It's all acting. And they made Steve Wiebe into a whiny, cry baby which he really isn't in real life. It was naughty, but it gave them the perfect formula for the movie.

For more on Richie, see the movie *The King of Arcades*, listen to his band *Knuckle Sandwich* or visit his arcade in Flemington, New Jersey, USA.



"You need the skill to capitalise on the good luck"

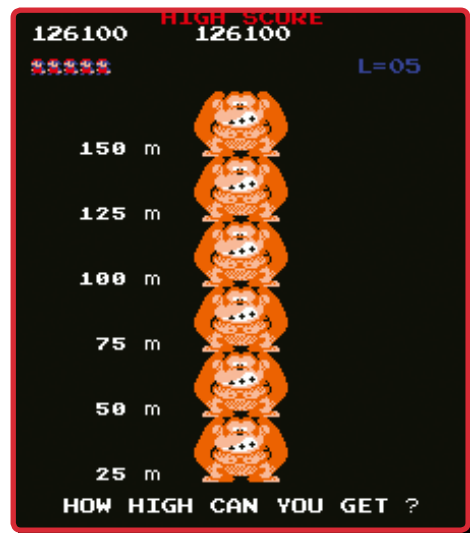
Wes Copeland

► made obscure subjects and subject matter into a film everyone could watch and enjoy. They just didn't tell the story that Billy, and others, hoped they would."

As well as making the tale of two grown men battling for bragging rights on a 26-year-old videogame accessible and entertaining to a mainstream audience, they also ignited the interest of the classic gaming community. Whilst anyone with even a passing knowledge of old arcade games knew *Donkey Kong*, before the release of the film it was not generally seen as a 'tournament' game. The huge success of *The King Of Kong* changed all that. Events like the Kong Off (see boxout) encourage head to head competition, sites like Twitch allow players to stream their games and a whole community of avid gamers have coalesced around donkeykongforum.com which conscientiously tracks the scores of the 300 best players. Steve Wiebe and Billy Mitchell, the old kings, just scrape into the top 20. The ten best scores have all been achieved in the last five years and the world record has changed hands numerous times since 2010, with Wes Copeland currently sitting in the number one spot thanks to spending just over three-and-a-quarter hours in May 2016 amassing an incredible 1,218,000 points.

"A record-breaking game takes a combination of both skill and luck," smiles Wes. "You need the skill to capitalise on the good luck, so you're looking for that lucky game. I would say for every 20 games of *Donkey Kong*, only one has the potential to [set a record] just based on the randomness in the game."

There are two key things you need to know about Wes. First, his skills are mesmerising. Just visit twitch.tv/wescopeland if you need any convincing of his mastery of the game. Second, he is 26 years old. Yes, he wasn't even born when *Donkey Kong* first entered the arcade. If his quest to be the best isn't due to nostalgia or rekindling a childhood passion for the game,



► It's a tough task getting to 150m, let alone racking up a score that will make Water Day blush.

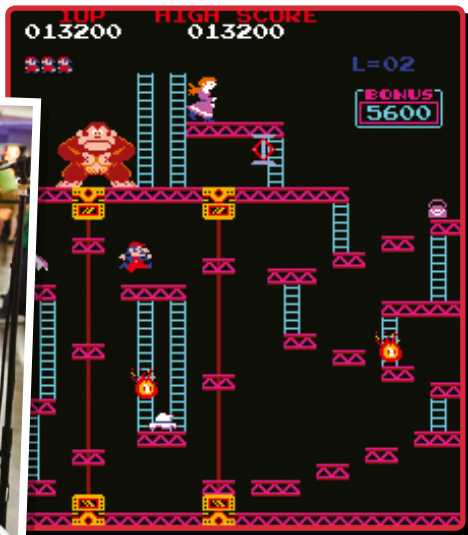
we assume it must be down to seeing *The King Of Kong* and deciding, 'I want that crown'.

"I think it's a common misconception that the film is the reason why people are interested in competing on *Donkey Kong*," Wes corrects us. "There are films about other classic titles and they receive little to no attention. What attracted me to the game was the fact that, by accident, it's perfectly built for competition."

This is something we had not considered. Surely any game that records a high score is ideal for competitive play?

Wes outlines the factors which make *Donkey Kong* so well suited. "First, it's easy for anyone to understand. It's watchable even if you're not a player. Second, due to the heavy amount of randomness in the game, there are no all-purpose patterns that work 100 per cent of the time. No two barrel boards will ever be the same. Sure, there are 'patterns' we use on the rivets screen, but they only work about 60 per cent of the time at best. As a result, the game forces you to be inventive, creative and strongly leverages your problem-solving skills. Third, the game length is just enough to drive you to borderline insanity but not push you over the edge. A 'safe' kill screen game takes an hour and a half and a world record game takes about three and a half hours. And fourth, there's the kill screen itself."

Ah yes, the infamous kill screen. A bug in the code means on level 22, after 116 screens of leaping and ladder scaling, Mario (or Jumpman as he is named in the game) unexpectedly keels over and dies after just a handful of seconds. Even the most skilled player could never complete the board in the minimal time given so it effectively provides a distinct 'end' to the game. That's important because it means, unlike many classic titles, it cannot theoretically be played forever. Games like *Q*Bert*, *Asteroids* and *Nibbler*, which give players extra lives at regular intervals, can be 'marathoned', with single games often lasting several days, and achieving the high score becomes as much a test of endurance as skill. With *Donkey Kong*, the predetermined end point means players must focus on meticulously exploiting every possible point scoring opportunity along the way. "Many classic games have one of these four factors but it's a truly rare gem that has them all," notes Wes. "It's ►



► Be careful not to fall too far; Jumpman's knees aren't very strong and too high a tumble will lose you a life.

© Bill McEvoy



► Richie Knucklez plays side saddle at the Kong Off 4.

WALTER'S WISE WORDS

The high score referee gives his take on the documentary

"*The King Of Kong* is unquestionably a work of art that will be revered by people for a very long time," declares Walter Day, founder of Twin Galaxies and one of the stars of *The King Of Kong* film. "It is now widely known, however, that it was an intentionally designed work of fiction that strived to create an endearing hero and an unforgettable villain. The film throws aside the facts and makes a spectacle that entertains even non-gamers. Everyone in the film felt hurt and betrayed but it has become both a learning experience as well as vehicle for personal growth... learning forgiveness, overcoming obstacles and not taking one's self too seriously. Everybody needs to star someday in their own *King Of Kong*-type debacle and benefit from the much-needed humility that it serves up."

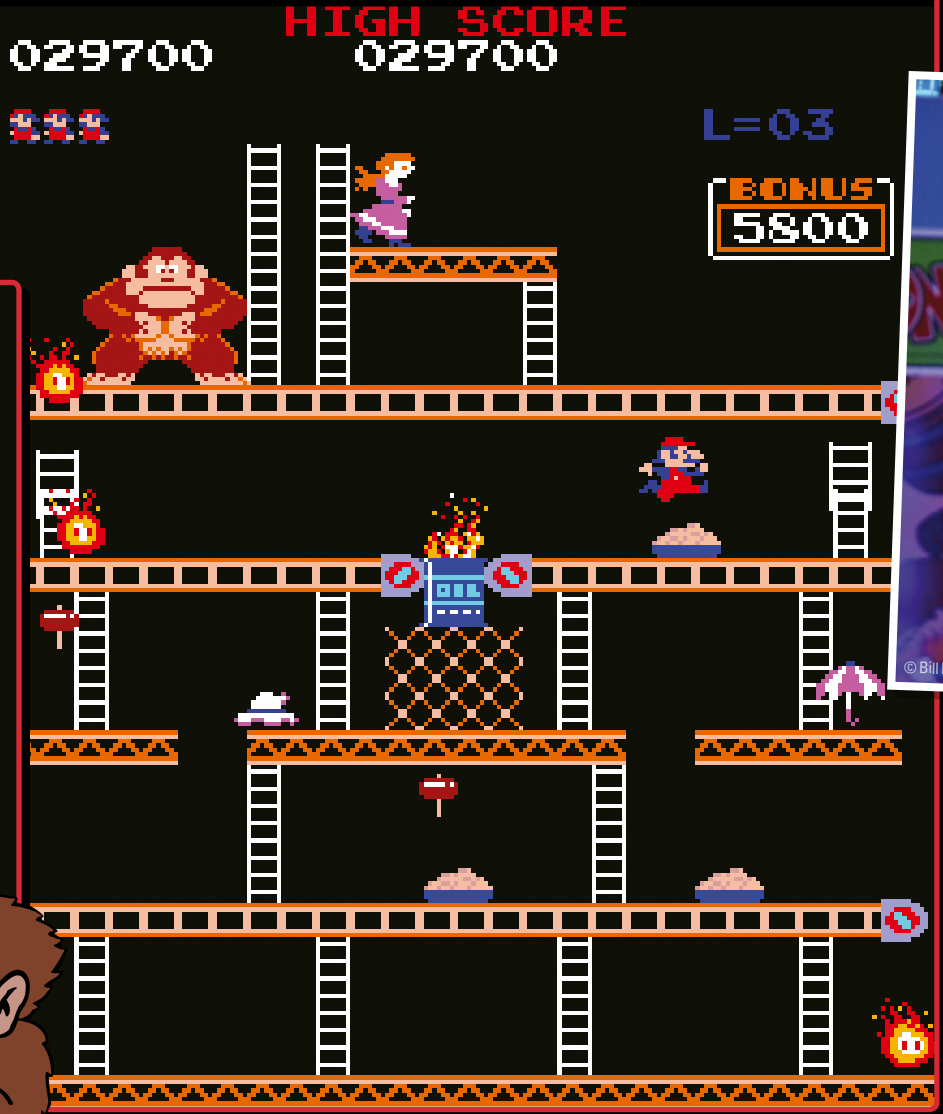
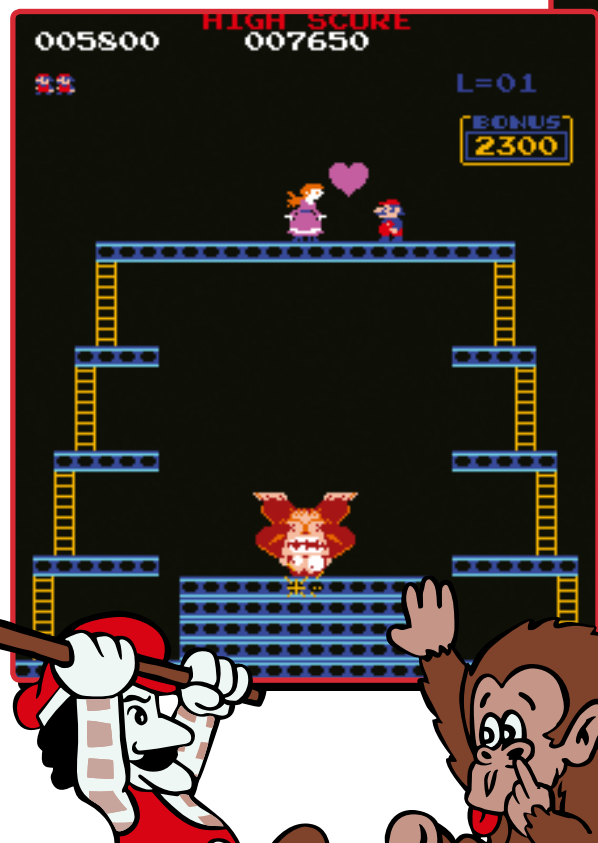


© Bill McEvoy

» 'New' boy Robbie Lakeman (left) battles Steve Wiebe (right) at ReplayFX, July 2016.

DONKEY KONG

» Jumpman's taking a leap of faith in the 'Pie Factory'; which way will the conveyor belt shift the hazzard?



"I've bloody smashed the cabinet with my bare hands"

Allen Staal

To be the best at any hotly contested game requires the kind of single-minded dedication and endless practice which most psychologists would deem 'obsessive' but we have noticed something else whilst watching videos of the top players showboating their skills at live events. They actually get emotional. There are head slaps, fist pumps, whoops and the occasional profanity. Compare that to the grim determination on the face of an expert *Pac-Man* player, silently striving for the perfect game. *Donkey Kong* seems to really inflame passion in its players and none more so than Australian Allen Staal.

YouTube. "Number 4 is my favourite," quips Brian. "It's definitely not healthy me swearing and carrying on the way I do. It's just I want that high score, mate, and I get so frustrated when I can't. The Americans that tune in seem to love it for some reason. I was a nobody here in Australia but now I've travelled to America to the Kong Off and have friends all over the world."

Allen is a well-known figure in the *Donkey Kong* scene and clearly enjoys being part of the worldwide community which has grown up around the game yet even he notes that some of the rivalries are far from friendly. Back-biting, bitterness and allegations of foul play have sadly become as common as the camaraderie of players sharing tips and tricks and enjoying seeing the score pushed ever higher.

"It's a members club, a social clique, and I think they've inadvertently alienated more people than they've retained," states Cat DeSpira, a videogame writer, avid arcade collector and outspoken critic of the male-dominated tribalism she sees as blighting the classic gaming community. "The attention *Donkey Kong* has received over the last ten years didn't happen organically. It was a direct result of commercial marketing via the two main characters in the film, Walter Day and Billy Mitchell, and they've used the recognition they've received from *The King Of Kong* to reinvent their historical accomplishments [to imply] they had more influence on classic gaming than they ever

why *Donkey Kong* is perfect for competitive gaming and I'm a very competitive person."

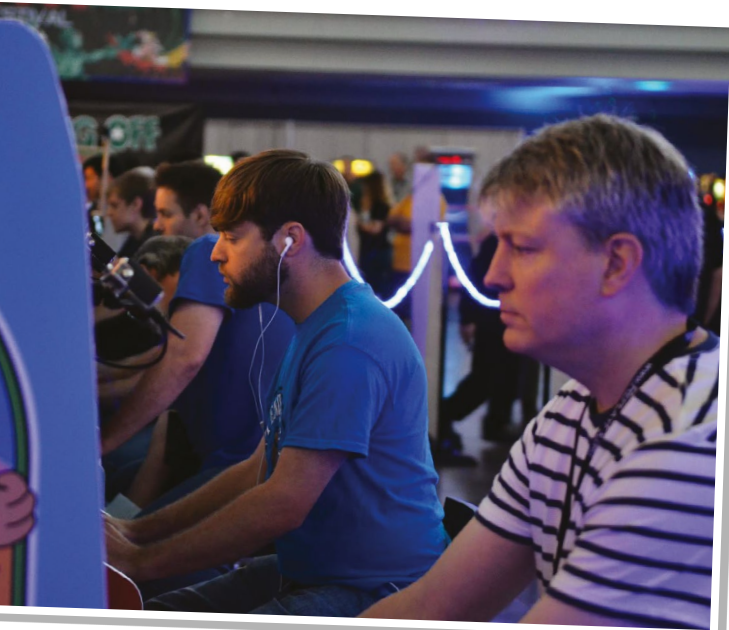
Of course, you cannot have competition without competitors and Wes' record-breaking score was undoubtedly a product of his rivalry with previous champion and victor of the last Kong Off, Robbie Lakeman. "When Wes started competing against me it made me even more motivated to play," reveals Robbie, who at 30 years old is another of the new generation of contenders who didn't grow up with the game. "It sped up my progress as a player. I hope I can take the record back one day. With the right amount of luck, my highest score would be around 1.25 million but I don't want it to consume all my time. I became obsessed with wanting to be the best at it. It can become an unhealthy obsession when it starts to feel like a second job."

I've bloody smashed the cabinet with my bare hands," confesses Allen, who has reached the kill screen on half a dozen occasions but is yet to crack the magic million mark. "I've broken my knuckles a couple of times and cracked a wrist. I've often said I'll take an axe to the bloody thing but I don't because it took me so long to build the cabinet in the first place! Yeah mate, *Donkey Kong* is an obsession."

Allen is what is diplomatically known as a 'character'. His outbursts while streaming his play online have become legendary, featuring industrial levels of swearing, full frontal cabinet abuse and singalong rants directed at his rival, Brian Allen, who he carefully explains is a "fucking idiot". You will find no less than five 'rage' compilations of Brian's hugely entertaining antics on

» Robbie Lakeman after his triumph at Kong Off 5.





really had. I see that arrogant ass Mitchell at Kong Off events, sauntering around the room like an old, worn out tune, barely able to play the game at the level he's acting he can or ever did, knowing no matter who wins, he will still maintain the rhetoric that he's 'The King of Kong' and Day will eternally back him up."

Cat is in no doubt who isn't the King but that leaves the question of who exactly is? In one sense, the answer is obvious. Right now, it's Wes Copeland. He has the highest score ever recorded but it could be beaten by Robbie Lakeman or any skilled contender tomorrow. Indeed, someone inspired by this article to study the videos online, learn the secrets of maximising their score and put in the many hundreds of hours of practice required could become the new champion.

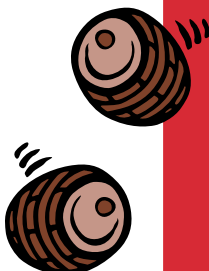
» Robbie Lakeman playing side by side with Steve Wiebe.

The more interesting question is why is Kong still King? Of all the games from the Golden Era of the arcade, why does *Donkey Kong* remain such a draw to players old and new? We think it's a combination of factors. The film undoubtedly brought it to the attention of an audience far beyond the retro gaming crowd and the movie title unequivocally posed a seductive challenge to a whole new generation of players. It also inextricably linked the eternally photogenic Billy Mitchell with the game, meaning every public appearance, interview or media mention of the most famous man in classic gaming inevitably leads to talk of *Kong*.

Then there are the mechanics of the game itself, which lend themselves so well to score chasing. The competitive gaming scene that has sprung up around events such as the Kong Off keeps the interest high as does the fact that the crown keeps changing hands, with new challengers emerging to challenge the old guard. The community which has developed around is crucial here, too, particularly in the early days when videos posted by experts such as MAME master Brian Saglio showed how the score could be pushed into the stratosphere. And there's the 'Mario' factor: gamers will always want to know where the most iconic videogame character in history had his first jump.

One other thing. It's just a bloody good game – easy to learn but difficult to master, as all the best games are. So put in a credit, hit start and see what your answer is to that enduring question: How High Can You Get? ★

Thanks to all the Kings and Queens of Kong who contributed to this article.



THE KINGS OF DONKEY KONG

SCREEN PLAY

Five more great films about classic videogames

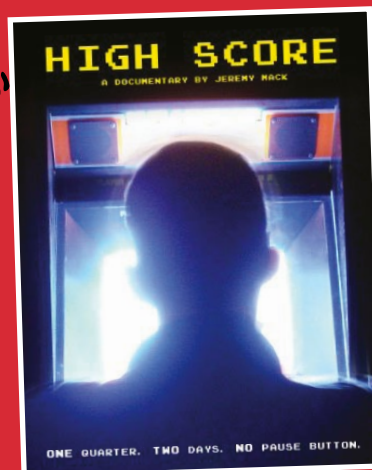


◀ INTO THE VALLEY OF THE SPACE INVADERS 1982

■ A fascinating look at life at Atari during its Golden Era, this short documentary features great footage of classic games and their creators. And did you know the *Tempest* controller should actually be called a 'whirtigig'? Us neither.

▼ HIGH SCORE 2006

■ Focusing on Bill Carlton's attempt to break the long-standing *Missile Command* marathon record, a feat which requires playing a single game continuously for over two days, this is a profoundly human story of hope, despair and roller disco.



▼ MAN VS SNAKE 2015

■ *Nibbler* holds a special place in high scoring history. Tim McVey was the first person to record a billion point game back in 1984 and this highly personal film follows his quest to regain the crown and the many shenanigans along the way.



▲ CHASING GHOSTS 2007

■ Taking the famous *Life* magazine photo of top arcade players from 1982 as a starting point, this documentary traces the stories of those fresh-faced champs as they prepare for a reunion with old friends and rivals. Entertaining and touching in equal measure.



▲ THE LOST ARCADE 2015

■ An unashamedly nostalgic look at how arcades shaped lives and forged friendships, centring on Chinatown Fair in New York City. If you misspent your youth feeding coins into cabs, this will bring a smile to your face, a tear to your eye and a twitch to your fingers.

THE MAKING OF

NEBULUS

Uridium seems an unlikely inspiration for a platformer, but then *Nebulus* started out as a shooter. John M Phillips tells Rory Milne how a revolving cylinder evolved into an 8-bit classic



IN THE KNOW

- » **PUBLISHER:**
HEWSON CONSULTANTS
- » **DEVELOPER:**
JOHN M PHILLIPS
- » **RELEASED:** 1987
- » **PLATFORM:**
C64, VARIOUS
- » **GENRE:** PLATFORMER

During the Eighties, many UK games coders favoured a single system, but some Spectrum specialists also converted their work to the Amstrad, and certain C64 developers had cut their teeth on the BBC B. Less common, however, were programmers who worked on all four popular computers, but John Phillips was one such coder, and, as he explains, in mid-1987, his *Uridium*-inspired follow-up to the critically-acclaimed *Impossaball* was about to switch systems and to take influence from a game written for a third. "My setup back then was that I had a BBC Micro," John begins, "which was the main machine. It had a cross-compiler and was hooked up by parallel ports to a Spectrum and C64. [*Nebulus*' towers] started out as horizontal cylinders scrolling across the screen left to right – that was on the Spectrum. Basically there was a spaceship that went along the cylinder surface, and there were abstract aliens spinning around it. When I switched it over to the C64, that was when technical challenges began causing problems. I was using character maps – that was the reason for why the towers were done vertically. One of my favourite games at the time was *Frak!*, on the BBC, and I just fancied doing something like that."

As well as platforms and monsters, *Frak!* also boasted a colourful lead in Trogg the caveman, and soon John set about designing a multihued hero of his own,



» Between levels, Pogo is tasked with catching fish with a bubble gun in a submarine.

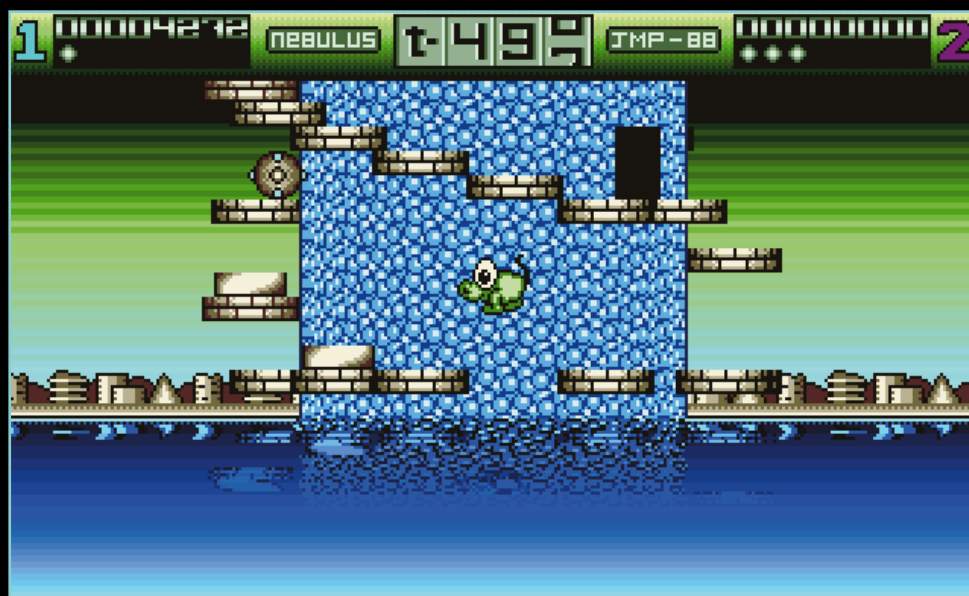


» Get hit by an enemy and you'll drop downwards, leaving you precious little time to reach the tower's zenith.

one that was brave enough – and small enough – to enter the doors that he planned to implement in his game's revolving cylindrical towers. "Half the game ran on the BBC, I either had an art package or I made one, and I wrote a sprite editor," John remembers. "It was all organic; I just started writing the game. I think Pogo came first, he was one of the first things I did, I think most of the other characters came as the game developed. Once I got onto the C64, I realised I needed a character. I think there were several before Pogo. It was just a case of finding 'something' that could rotate, and of a size that he could fit through the doors."

That 'something' was part-pig and part-frog, but if Pogo looked odd, then John's other characters – Pogo's geometric foes – looked surreal, although their appearance was dictated by ease of animation rather than design. "They were mainly down to necessity; they had to be symmetrical. They had to be drawn in 16 frames of animation, with all the rotations. Those limitations meant that you were very limited in what you could do – I had to be able to draw them, this was before 3D art packages. But it appealed to me [that the enemies looked surreal]."

Of course, Pogo and his strange foes needed a world to inhabit, which required John to write a 2D level editor to make his rotating tower mechanic playable. A byproduct of which saw upcoming threats that were visible in two dimensions become hidden



» After outsourcers failed to deliver an Amiga *Nebulus*, John Phillips produced the conversion himself.

dangers when depicted in 3D. “The way I designed the towers was I had a level editor; you could lay levels out on a grid. I’d design a tower, add it to the game, play it, change things and play it again. Once I could finish a tower, it was okay. Because of the way that I designed it, the level editor showed a flat grid – 16 cells wide. So it wasn’t until you actually played the game that it was wrapped around a tower. [The obscured hazards were] just a happy accident!”

A less-happy experiment followed, as John tried to connect the towers he was designing by combining a number of them on-screen to form battlements. “I was just trying to find ways to link the towers into an overall world. I think there were a number of ideas for that. Because of the way I was rendering, you drew everything from the front to the back so it didn’t matter how many things you had on the screen – the game’s frame-rate would be constant. The idea didn’t work. I had a prototype, but I just abandoned it.”

One positive of John’s abandoned ‘battlements’, however, was that they gave him the idea of having the doors on his towers lead to corridors, which he retooled to work with single towers. “They looked cool!” John enthuses. “I added them to the level editor, tried the game and realised they worked. I think

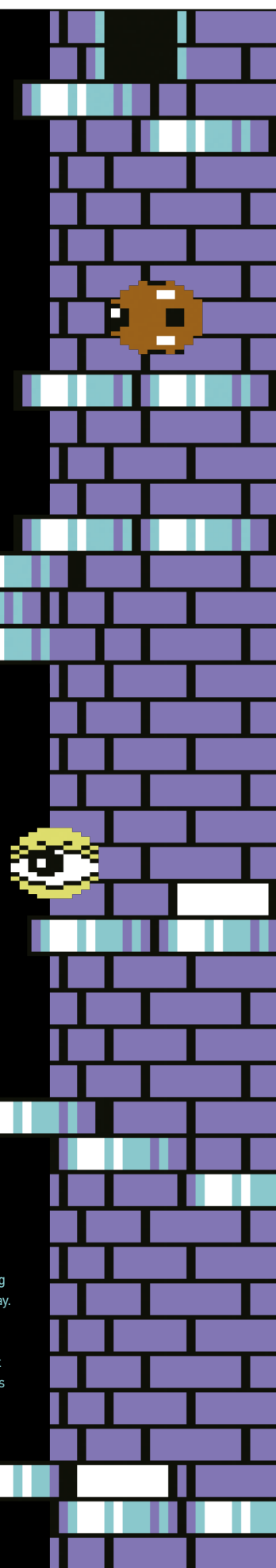
they were originally [connected to] the battlements idea; the battlements needed some way of transferring you from one tower to another. It was just one of those silly ideas I had. You have a corridor, and you have Pogo rotating, and entering and exiting at either end. I just realised it worked and stuck with it.”

John also stuck with Hewson Consultants – the publisher of his most recently-published title – where the helpful staff and persistent boss gave the designer advice and motivation, respectively. “Hewson published my previous game *Impossaball*. They kept on contacting me and asking what I was doing. They were quite a small company; it was virtually Andrew Hewson and a couple of staff in the office. They had a producer – Paul Chamberlain – and he gave some input. And so did another guy – Barry Simpson. I had to go up to Hewson every couple of months, every time I did a different version of the game. I’d loads of different versions exploring different graphic styles. Andrew Hewson was good at pushing me. He’d phone up and say: ‘Have you thought about this?’ And I’d go away and think about it.”

Much of what John thought about evolved into gameplay elements for his rotating towers, including dissolving and destructible platforms – the latter of which would cause obstructions and backtracking, and required John to arm Pogo with snowballs. “We

NEBULUS 101

■ Essentially a vertical platformer, albeit one that’s set on the outer walls of a series of rotating towers, *Nebulus* combines platforming standards with novel gameplay. So when he’s not negotiating elevators and disintegrating floors, the game’s protagonist is tasked with dispatching foes and removing obstacles by throwing snowballs at them.



NEBULUS 2

The Amiga sequel that took Nebulus to the next level

Developed by German developer Infernal Byte Systems, *Nebulus 2* features eight towers – as with the original game – but additionally tasks players with climbing down and repairing each tower after reaching their summits. As well as doubling the challenge, *Nebulus*' successor also makes improvements to the towers functionality, with the pick of the enhancements being switches that reveal hidden platforms and doors, transporters that Pogo can beam between and moving platforms that the intrepid protagonist can hitch a lift on.

Other additions include collectibles ranging from keys to jet packs to bouncy trainers – respectively required to unlock doors, dispatch anything in Pogo's path and jump higher – and a broader range of foes – inspired by nature, sci-fi, haunted house inhabitants and everything in between.

Understandably, the second *Nebulus* also has better visuals than any version of the first, which is at least partly explained by the fact that the sequel was specifically designed for the Amiga.

Embellishments aside, the gameplay in *Nebulus 2* remains as rock-hard as its predecessor's, and as with the original game, the extremely challenging nature of the follow-up guarantees replay value. That's not to say the second instalment of *Nebulus* crushes your enthusiasm – tricky sections do become easier once practiced – it's more that the game punishes you if you make a half-hearted attempt at a section you think you've mastered. That said, there's nothing more satisfying than reaching the top – or bottom – of the towers in *Nebulus 2*, and this likely explains why the game holds such a strong 'just one more go' appeal.

► wanted to have destroyable blocks. It was just a case of making them a different size from the normal blocks – and making them flash was an easy thing to add. You could force backtracking, that was an easy matter. I think originally there was no shooting. But then we realised that destroyable platforms would be good, and then how do you destroy them? The snowballs were just ... well, you needed something large enough so that you got to see it. You had a starfield at the back, and bullets would have just looked like stars."

Besides a starfield, on the advice of Hewson's boss, John's evolving game soon shared a second aspect of the project's original inspiration, *Uridium*; bonus levels that would connect the main stages. "Andrew Hewson was trying to make me think of bonus levels. I just thought of a scrolling seabed. I can't remember when it came about. I think we were trying to figure out how to start the game, because you've got a submarine. The submarine comes up and the lid draws back and Pogo jumps out. I think the submarine



DEVELOPER HIGHLIGHTS

IMPOSSABALL
SYSTEM: ZX SPECTRUM,
AMSTRAD CPC
YEAR: 1987

NEBULUS
SYSTEM: C64, VARIOUS
YEAR: 1987

ELIMINATOR
SYSTEM: ATARI ST, VARIOUS
YEAR: 1988



» Ghostly visuals aside, the Atari 7800 *Nebulus* – known as *Tower Toppler* – is an accurate conversion.

MECHANICAL MARVELS

More games that pushed technical boundaries



ANT ATTACK

■ Although far from the first 3D videogame, *Ant Attack* hosted one of gaming's earliest three-dimensional open worlds. Art school graduate Sandy White approached the creation of *Ant Attack*'s unique visuals as an exercise in sculpture and devised rescue-mission-themed gameplay to complement his game's immersive pixel-brick world.



I, ROBOT

■ Besides introducing filled polygons to videogaming, Atari legend Dave Theurer's cult classic also boasted a completely unique look. Viewed from an aerial third-person perspective, *I, Robot* challenges its iconic, geometric protagonist with trippy chess-like platforming, surreal mazes, intense shoot-'em-up sections and set-piece bosses.

“I realised that we had to tone down the game. We made it more linear.”

John M Phillips

was in fairly early, and that probably just led to the underwater levels.”

In-house playtesting followed, both by John and selected Hewson staff, but the real test of the game – now known as *Nebulus* – came later, when the title was previewed at an industry trade show. “I think there were only about three people that played it – it was Paul and Barry at Hewson, and me. That was it. We went to some trade show – one of the early PCW shows – and we had *Nebulus* on the stand. Everyone was transfixed by it, but realised as soon as they tried it that they couldn’t play it. I think it was the fact that they hadn’t seen anything like it before. After that, I realised that we had to tone down the game. We made it more linear.”

After some adjustments to *Nebulus*’ difficulty curve had been made, Hewson went on to publish John’s game in time for Christmas and to send it for review, where the highly-original C64 platformer was met with critical acclaim. John’s Spectrum conversion was equally well received, although its limitations frustrated the designer. “I remember it reviewed very well in the Newsfield magazines,” John notes. “The C64 game had one of the highest marks they had ever given. I spent about a month on the Spectrum version; I was disappointed because there was no way of getting more colour.”

In addition to the Spectrum *Nebulus*, John subsequently coded highly-rated 16-bit versions in very short order, although this had not been the designer’s original intension. “I did the ST and Amiga versions, but Hewson had originally contracted a porting house based in Leeds. They were doing it for about six



» Although sluggish, Chris Woods’ Amstrad *Nebulus* conversion perfectly replicates the original’s gameplay.

months, and I remember we went up to see them, and it was obvious to me that they didn’t have a clue what they were doing. At the time, I was doing *Eliminator* on the ST, but I was so angry that I decided to convert *Nebulus* myself. I think I converted it in two months. Because I’d done *Eliminator*, I had all the tools. And I still had the maps from the original game.”

A number of conversions to other systems were also produced – although *Nebulus* was renamed *Tower Toppler*, *Castellan* and *Kyorochoan Land* for the US and Japanese markets, which is something that John has since come to terms with. “I think I helped out with the Amstrad version and the PC version,” John recalls. “I can’t remember much about the Archimedes version. The Nintendo versions were done by BITS Studios in London. I remember talking to them about a year later. Hewson got an advance from Nintendo

– none of which had been passed on to me. The American versions were called *Tower Toppler* because of the publisher Triffix. The Japanese versions were changed to *Castellan* because Nintendo didn’t like the name *Nebulus*. It probably bothered me at the time, but I couldn’t care less now!”

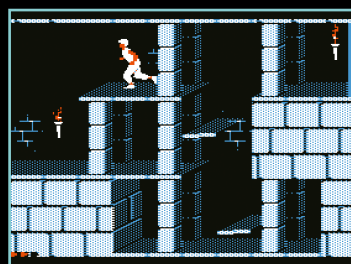
As for his current feelings towards his C64 original, John is philosophical about the limitations imposed by *Nebulus*’ host hardware and humble about a classic that was largely down to his singular vision. “It’s difficult looking back at old games, because so many things have come since. In terms of the size of the game, it’s all you could do. I think I was just lucky; it was a case of happy accidents, really. It was just designing a game without thinking, and the fact that it was designed by one person who did the programming and also the art.” ★

Many thanks to John for revisiting *Nebulus*.



XYBOTS

■ Intended by developer Ed Logg as a 3D reimagining of his classic coin-op *Gauntlet*, *Xybots* was instead repurposed as a sci-fi shooter. Ed’s game is rendered with sprites rather than polygons and rotation is limited to 90-degree turns, despite those limitations *Xybots* still helped to lay the foundations for the deluge of first-person shooters that followed.



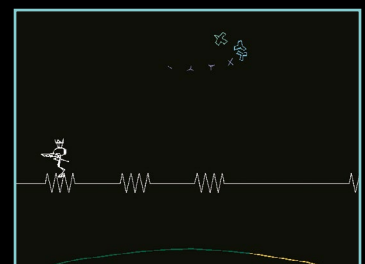
PRINCE OF PERSIA

■ Quite how Jordan Mechner coaxed an Apple II into depicting realistic animation is anyone’s guess, but even today, *Prince Of Persia*’s visuals are disconcertingly lifelike. The acclaimed developer’s technique involved tracing frames of old movies – and film of his own brother running and jumping – and then adapting these tracings into sprites.



JUMPING FLASH!

■ An early polygon platformer, although *Jumping Flash!*’s real innovation lies in its protagonist’s mile-high jumps. The novelty of Robbit’s aerial stunts is that while leaping he changes his viewpoint to look downwards instead of forwards, which allows him to target foes to long-distance stomp or blast – while additionally inducing giddy euphoria in the player.



VIB-RIBBON

■ Typically highlighted for its musical (rather than graphical) attributes, NanaOn-Sha’s cult rhythm game is easily as visually novel as it is aurally inventive. *Vib-Ribbon*’s surreal graphics are best described as animated line drawings that are gently panned around as the player tries to overcome obstacles which are determined by their chosen soundtrack.

COLLECTING

Cada Alastars

The range of tape games are proving popular with collectors today. Martyn Carroll looks at their appeal and reveals the coveted releases



COLLECTOR Q&A



Brothers Richard and David Darling had one clear objective when they established Codemasters in October 1986: "To sell only the best possible games at the best possible price." There's no question that they achieved the price promise, with their range of 8-bit games retailing for the standard budget price of £1.99, eventually rising to £2.99 and £3.99 as the market matured. As for the quality of the games, well that's clearly subjective, yet it's generally accepted that Codemasters were one of the more reliable publishers of original budget games. It released a few scrappy titles for sure, but most were good and some were great. Overall, you were unlikely to feel ripped-off when you handed over some loose change for the latest Codemasters release.

For collectors, quality is something of a moot point anyway, as the simple aim is to collect them all, whether that's the full range on one format, or the complete 8-bit set. Codemasters' main 8-bit platforms were the ZX Spectrum, Commodore 64 and Amstrad CPC, and it released (excluding compilations) 110, 100 and 91 titles for those machines respectively. It also released a handful of titles for the Commodore 16, Atari 8-bit, MSX and BBC/Electron. Crucially, the majority of the games were issued in single jewel cases with uniform white inlays, so they look great on a shelf. It's not hard to see why Codemasters is a big draw for collectors.

One issue for collectors is that the games are not conveniently numbered. Most titles have a four-digit product number displayed on the spine – beginning '1' on the C64, '2' on the Spectrum, '3' on the CPC, and so on – but there's no obvious sequence to the numbering. As such, it can be difficult to build up a complete and verified

» *Crystal Kingdom Dizzy* was not only the last 8-bit Dizzy game, but also full-priced.

Budget game fan Guy Black owns hundreds of Codemasters titles...

What are your reasons for collecting Codemasters titles?

I started collecting for the Spectrum about 15 years ago. I used to download games from the World of Spectrum website, but none of the Codemasters games are available for copyright reasons. This inspired me to start picking up the odd game from eBay. Before I knew it, I was going after a complete set.

Which 8-bit formats do you collect for, and how close are you to getting full sets?

I have a full set of Codemasters games for the BBC/Electron, Commodore 16, Atari 8-bit and MSX. My Spectrum set is one tape (*Sergeant Seymour Robotcop*) and one disk (*Rock Star Ate My Hamster*) away from completion. I've just recently started grabbing a few tapes for the Amstrad CPC as well, and have around 30 so far.

In your experience, which are the rarest Codemasters titles, and what's the most you've spent to secure certain games?

Prices have been going through the roof for some games. The rarer titles are some of the later Spectrum games that were released in 1992-1993, towards the end of the format's commercial life. *DJ Puff* is particularly hard to find, along with a couple of the Seymour games. Myself, I paid less than a tenner for *Grell & Fella* a few years ago. I paid £35 for *Stuntman Seymour* last year and I think the most I've paid is £50 for the CD Games Pack. Although I suspect if I find a copy of *Sergeant*



» A small selection of Guy's almost complete Spectrum set.

Seymour or the disk version of *Rock Star* for the Spectrum, my wallet may take a beating.

Fans are naturally drawn to the Dizzy games, but are there any other Codemasters games you would recommend collecting?

I really like the Seymour games and think they are up there with the Dizzy franchise, and finding the rarer titles can be both fun and frustrating in equal measure. I used to buy quite a few of the Quattro packs when I was younger. They were a good way of getting four games for little money.

For those looking to start collecting Codemasters, what would you suggest are the best ways to acquire them?

There's a lot of interest out there in Codies games. Look for bundles on auction sites and check out some of the groups on Facebook. There are many collectors in those groups who buy bundles of games and sell off their duplicates at very reasonable prices. There's a very friendly community of collectors out there who really like to help each other out.

Which other software ranges would you recommend as good ones to collect?

I love collecting budget re-releases. I rarely bought full-price games as a young 'un. I have been collecting Hit Squad, Kixx and Mastertronic titles for years and almost have full sets of each. They are generally cheap to pick up and take up little space, being single cassette cases.



» Some of Guy's big-box releases that complement the standard, single jewel case titles.



» The Oliver twins were extremely prolific on the Codemasters label. This is the rather entertaining *Grand Prix Simulator*.





► catalogue of all releases. The list that follows this feature has been compiled from multiple sources and we believe it to be 100 per cent complete and accurate for all seven 8-bit formats that Codemasters supported.

As with all collections, the prices vary wildly. The majority of releases – such as the many ‘Simulator’ titles which became synonymous with Codemasters – are hugely abundant and can usually be picked up for around the same price as they originally retailed for, or even less in some cases. This means that the bulk of the collection can be amassed with little outlay. However, some releases are much scarcer and therefore command far higher prices. Codemasters continued to support the 8-bit computers until 1993, by which point the market had shrunk dramatically and the later titles sold in much smaller numbers. Therefore you may have pay upwards of £100 to obtain some of these titles.

“The highest prices are typically reserved for the Spectrum versions”

One thing to note is that the highest prices are typically reserved for the Spectrum versions. The price of Spectrum games in general is rocketing at the moment, no doubt due to the buzz around the various Speccy devices in development, and this is causing the price of the rarest Codemasters releases to rise and rise. Some titles in the Amstrad range can also command decent prices, although not in the same league as the Spectrum equivalents. At the other end of the scale is the C64 where, for reasons unknown, the releases just don’t attract the same attention. A case in point: the sixth Dizzy game, *Dizzy Prince Of The Yolkfolk*, will fetch £50 minimum on the Spectrum any day of the week, yet on the C64 it can be grabbed for around £5. If you’re looking to collect Codemasters without breaking the bank then the C64 is the format to go for – and as an added bonus, there are some quality, exclusive titles not available on the other formats, like *Lazer Force*, *Thunderbolt* and *Slicks*.

We mentioned Dizzy just now, and for most people the Dizzy series will be the cornerstone of any Codemasters collection. The first four titles in the adventure series, along with the various arcade spin-offs, can be picked up easily and cheaply. The fifth, sixth and seventh games – *Spellbound Dizzy*, *Dizzy Prince Of The Yolkfolk* and *Crystal Kingdom Dizzy* – are relatively rare and require deeper



» The ubiquitous *BMX Simulator* was Codemasters’ first mega-hit and set the company on the road to success.



» When you’re done with Dizzy, you should spend some quality time with the Seymour games.

TOP TEN RARITIES If you’re collecting Codemasters then you’ll need to dig deep for these releases



ROCK STAR GOES BIZARRE!

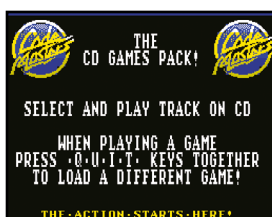
1988

■ This special version of *Rock Star Ate My Hamster* was created for a promotional competition that ran in *The Sun* newspaper. The game featured unique content and just ten copies were produced for the lucky winners. A copy of the Spectrum version popped up on eBay in July 2016 and went for £125. If another appears, it’s likely to top that, with speculation that it may hit £200.

CD GAMES PACK

1989

■ The novel compilation featured 30 games on a CD-ROM that could be loaded into your computer via a standard CD audio player. It originally retailed for £20 and these days it will fetch around three times that amount, although only if it comes complete with the data transfer cable, loader tape and manual. It’s common to find examples with bits missing, typically the cable.



DIZZY PRINCE OF THE YOLKFOK

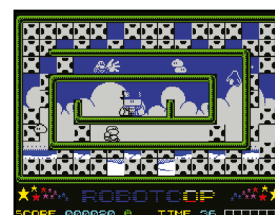
1991

■ The sixth game in the series originally debuted on the 1991 collection *Dizzy’s Excellent Adventures*, and despite the promise that it was exclusive to the pack, it was released as a standalone title in 1992. This short and sweet adventure now fetches £50-70 on the Spectrum. Its immediate predecessor, *Spellbound Dizzy*, is also a target for collectors and commands a similar value.

SUPERSTAR SEYMOUR

1992

■ Playing second fiddle to Dizzy but still a draw for collectors, the five Seymour games were gathered together for this compilation that was sold in the run-up to Christmas 1992. It’s typically worth £30 and upwards these days, particularly if the original poster and collectable cards are included. That may sound expensive, but it’s certainly cheaper than collecting the individual releases.



SERGEANT SEYMOUR ROBOTCOP

1992

■ As with *Prince Of The Yolkfolk*, this first appeared on a compilation (*Superstar Seymour*) before being released separately. This doesn’t appear in trading circles too often, so it’s difficult to gauge its current value, but it’s certainly rare and would set you back £60 minimum. This is for the coveted Spectrum version, of course – you could snap up the other versions for less.



» You'll need to pay the ferryman handsomely if you want to own the Speccy version of *Dizzy Prince Of The Yolkfolk*.

pockets, particularly on the Spectrum. There are other sets to collect too, like the five games starring Seymour – although some of those are as sought-after as the later Dizzy games, once again on the Spectrum mainly. A less expensive target is the numbered 'Cartoon Time' titles, of which there are five to collect, including *Olli & Lissa 3* (the sequel to the earlier Telecomsoft games) and *Frankenstein Jnr* (which was actually a reskin of CRL's *Bride Of Frankenstein*).

In 1988 Codemasters released its 'Plus' range of games (which came on two cassettes and retailed for £4.99) and these throw up some interesting quirks for collectors. The *Race Against Time* charity game has two cover variations as the original photo of Olympian Jesse Owens had to be replaced with one of Carl Lewis. The titles *Professional BMX Simulator* and *Jet Bike Simulator* were later re-released as standard

budget games, only they were renamed *BMX Simulator 2* and *Championship Jet Ski Simulator*, so collectors will need to grab both versions. On the C64 Super Dragon Slayer was initially released as a 'Plus' game before being re-released at the regular price, albeit with the same title in this case.

Then there's the 'Gold' range, which comprised just two titles: *4 Soccer Simulators* and *Rock Star Ate My Hamster*. Both were released at full-price (£9.99), and on the Spectrum and Amstrad they were the only instances where disk versions were also issued (on the C64, several of the earlier titles were also available to buy on disk). Later on, both titles were re-released as budget titles, so once again collectors will need to double-dip. *Rock Star* is particularly interesting as there's an additional, super-limited edition out there of which only a handful of copies are known to exist. For more on that and other highly coveted titles, see 'Top Ten Rarities' below. ★

COLLECTING CODEMASTERS

» *Miami Chase* was one of the few Codemasters games to not appear on the Amstrad.



SEYMOUR STUNTMAN

1992

■ Of the five Seymour games, this and *Sergeant Seymour* are the ones that attract the most attention from collectors. This platformer appears on eBay from time to time and its price just keeps going up. In the past six months, the Spectrum version has gone for between £89 and £113. This range is probably a good price guide, but don't be too surprised to see it creep up to £120 in the near future.



GRELL & FELLA

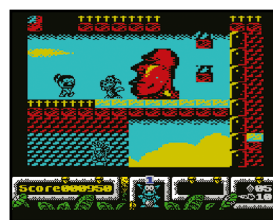
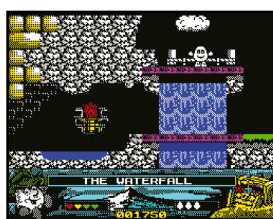
1992

■ Another late era release that most gamers will be unfamiliar with, but Codies collectors will know all about this one as it's on many a 'most wanted' list. This cartoony adventure (which is actually titled *Grell & Fella* in-game) doesn't come up for sale regularly and when it does, you can expect it to go for £80-120 on the Spectrum. A C64 version was developed but not released at the time.

CRYSTAL KINGDOM DIZZY

1992

■ The final Dizzy game for 8-bit computers broke the budget trend and retailed at full-price when it was released in late 1992. This no-doubt affected sales and now Dizzy's seventh adventure is perhaps the most sought-after of the whole series. On a good day you may be able to bag the Spectrum version for around the £80 mark, but it has been known to go for up to £120 in the past.



DJ PUFF

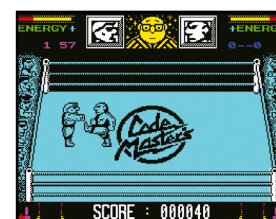
1993

■ This sequel to *Little Puff* sneaked onto the Spectrum in 1993, almost three years after the original, and will have therefore escaped the attention of many gamers. It's a different story these days as many collectors are trying to track down a copy. It's hard to say how much the Spectrum version is worth, but it's possibly the rarest of all the regular Codies 8-bit releases. You're talking at least £120.

WRESTLING SUPERSTARS

1993

■ Codemasters leapt on the wrestling bandwagon with this cut-price, low-rent copy of Ocean's *WWF WrestleMania* games. Quality counts for nowt however as this was one of the firm's last 8-bit releases, arriving in early 1993 and making it a target for collectors. It's not super rare, but when it does swap hands it can fetch up to £30, and sometimes even more if it's the Spectrum version.



CODEMASTERS CHECKLIST

Whether you're looking to collect one format or the complete 8-bit set, this list will prove invaluable

	ZX	CPC	C64	C16	A8	MSX	BBC
1st Division Manager	■	■	■				
3D Starfighter	■	■	■				
4 Soccer Simulators	■	■	■				
4 Soccer Simulators (Gold)	■	■	■				
750cc Grand Prix	■	■	■				
Advanced Pinball Simulator	■	■	■		■		
Arcade Flight Simulator	■	■	■				
Armourdillo	■	■	■				
ATV Simulator	■	■	■				
Big Nose's American Adventure	■	■	■				
Bigfoot	■	■	■				
Blade Warrior	■	■	■				
BMX Freestyle	■	■	■				
BMX Simulator	■	■	■	■	■	■	
BMX Simulator 2	■	■	■				
Bounty Hunter	■	■	■				
Brainache	■	■	■				
Bubble Dizzy	■	■	■				
Captain Dynamo	■	■	■				
Cartoon Collection	■	■	■				
CD Games Pack	■	■	■				
Championship Jet Ski Simulator	■	■	■				
CJ In The USA	■	■	■				
CJ's Elephant Antics	■	■	■				
Cosmonut	■	■	■				
Creations	■	■	■				
Crystal Kingdom Dizzy	■	■	■				
Cue Boy	■	■	■				
Danger Zone	■	■	■	■			
Death Stalker	■	■	■				
Defender Light Gun	■	■	■				
Dizzy	■	■	■				
Dizzy Collection	■	■	■				
Dizzy Down The Rapids	■	■	■				
Dizzy Panic	■	■	■				
Dizzy Prince Of The Yolkfolk	■	■	■				
Dizzy's Excellent Adventures	■	■	■				
DJ Puff	■	■	■				
Fantasy World Dizzy	■	■	■				
Fast Food	■	■	■				
Frankenstein Jnr	■	■	■				
Fruit Machine Simulator	■	■	■		■		■
Fruit Machine Simulator 2	■	■	■				
Ghost Hunters	■	■	■				
G-Man	■	■	■	■			
Grand Prix Simulator	■	■	■		■		
Grand Prix Simulator 2	■	■	■				
Grell & Fella	■	■	■				
Guardian Angel	■	■	■				
Hit Squad, The	■	■	■				
International Rugby Simulator	■	■	■				
Italian Supercar	■	■	■				
Jet Bike Simulator	■	■	■				
Kamikaze	■	■	■				
KGB Superspy	■	■	■				
Kwik Snax	■	■	■				
Lazer Force	■	■	■				
Little Puff	■	■	■				
Magicaland Dizzy	■	■	■				
Mean Machine	■	■	■				
Mega-Hot	■	■	■				
Miami Chase	■	■	■				
MiG 29 Soviet Fighter	■	■	■				
Mission Jupiter	■	■	■				
Monte Carlo Casino	■	■	■				
Moto X Simulator	■	■	■				
Mountain Bike 500	■	■	■				
Mr Angry	■	■	■				
Murray Mouse Supercop	■	■	■				
Necris Dome	■	■	■				
Ninja Massacre	■	■	■				
Olli & Lissa 3	■	■	■				
Operation Gunship	■	■	■				
Paris To Dakar	■	■	■				



COLLECTING CODEMASTERS

	ZX	CPC	C64	C16	A8	MSX	BBC
Phantomas	■		■				
Poltergeist			■				
Prince Clumsy	■		■				
Pro Boxing Simulator	■	■	■			■	
Pro Golf Simulator	■						
Pro Powerboat Simulator	■	■	■				
Pro Skateboard Simulator	■	■	■				
Pro Tennis Simulator	■	■	■				
Professional BMX Simulator	■	■	■				
Professional Ski Simulator	■	■	■				
Professional Snooker Simulator	■	■	■			■	
Pub Trivia Simulator	■	■	■				
Quattro Adventure	■	■	■				
Quattro Arcade	■	■	■				
Quattro Cartoon	■	■	■				
Quattro Coin-Ops	■	■	■				
Quattro Combat	■	■	■				
Quattro Fantastic	■	■	■				
Quattro Fighters	■	■	■				
Quattro Firepower	■	■	■				
Quattro Megastars	■	■	■				
Quattro Power	■	■	■				
Quattro Racers	■	■	■				
Quattro Skills	■	■	■				
Quattro Sports	■	■	■				
Quattro Super Hits	■	■	■				
Race Against Time, The	■	■	■				
Rallycross Simulator	■	■	■				
Red Max	■	■	■				
Robin Hood Legend Quest	■	■	■				
Rock Star Ate My Hamster	■	■	■				
Rock Star Ate My Hamster (Gold)	■	■	■				
SAS Combat Simulator	■	■	■				
Sergeant Seymour Robotcop	■	■	■				
Seymour Goes To Hollywood	■	■	■				
Seymour Stuntman	■	■	■				
Sky High Stuntman	■	■	■				
Slicks	■	■	■				
Slightly Magic	■	■	■				
Smash 16	■	■	■				
Soccer Pinball	■	■	■				
Spellbound Dizzy	■	■	■				
Spike In Transylvania	■	■	■				
Star Runner	■	■	■				
Steg The Slug	■	■	■				
Street Gang Football	■	■	■				
Stryker In The Crypts Of Trogan	■	■	■				
Super All-Stars	■	■	■				
Super Bike TransAm	■	■	■				
Super Dragon Slayer	■	■	■				
Super Dragon Slayer (Plus)	■	■	■				
Super G-Man	■	■	■				
Super Hero	■	■	■				
Super Robin Hood	■	■	■				
Super Seymour Saves The Planet	■	■	■				
Super Stuntman	■	■	■				
Super Tank	■	■	■				
Superstar Seymour	■	■	■				
Tarzan Goes Ape	■	■	■				
Terra Cognita	■	■	■				
Thunderbolt	■	■	■				
Tilt	■	■	■				
Tornado ECR	■	■	■				
Transmuter	■	■	■				
Treasure Island Dizzy	■	■	■				
Turbo Chopper Simulator	■	■	■				
Turbo The Tortoise	■	■	■				
Twin Turbo V8	■	■	■				
Vampire	■	■	■				
Wacky Darts	■	■	■				
White Heat	■	■	■				
Wild West Seymour	■	■	■				
Wizard Willy	■	■	■				
Wrestling Superstars	■	■	■				

Titles in italics are compilations.





TOP 20 Apple II GAMES

The Apple II was designed for games – creator Steve Wozniak wanted it to play Breakout. But far richer Apple II gaming greatness abounds, as Craig Grannell reveals...



Taipan!

■ PUBLISHER: Avalanche Productions
■ GENRE: Strategy/trading sim ■ YEAR: 1982

Essentially a watery *Elite* on the high seas of the 19th Century, *Taipan!* has you start life with cash and a debt – or a boat with guns but no money. You then sail between seven ports, taking on pirates for their booty, and dealing in silk, arms and opium. It's all very simple and text-oriented, but still rather tense when facing off against 20 pirate ships, or worrying your illicit cargo might be confiscated.



Flight Simulator

■ PUBLISHER: subLOGIC
■ GENRE: Simulation ■ YEAR: 1979

You won't swoop over photorealistic landscapes in *Flight Simulator* – instead, you get a limited map with basic wireframe graphics. But Bruce Artwick's game nonetheless deserves a place on this list, through kicking off a series that continues to enthrall. And if you fancy something a bit more advanced on the humble Apple II, *Flight Simulator II* substantially ramps up the complexity and visuals.



3D Docking Mission

■ PUBLISHER: The Elektrik Keyboard
■ GENRE: Arcade ■ YEAR: 1978

In the early days of the Apple II, games typically weren't nuanced. Even so, many were creative, as Christian Oberth's *3D Docking Mission* proved. The aim is simple: guide your craft through an asteroid field and dock with a mothership. But matters are complicated by limited fuel, comets unhelpfully streaking towards you, inertial movement, and a split-screen view that forces you to think in 3D.



Raster Blaster

■ PUBLISHER: BudgeCo ■ GENRE: Pinball ■ YEAR: 1981

In an era of realistic pinball titles such as *Pinball Arcade*, hyper-realistic animatronic fare like *Zen Pinball*, and creative takes on pinball like *PinOut* and *INKS*, *Raster Blaster* looks positively archaic. But in the history of pinball titles – and also Apple II games – this Bill Budge-designed table is hugely important.

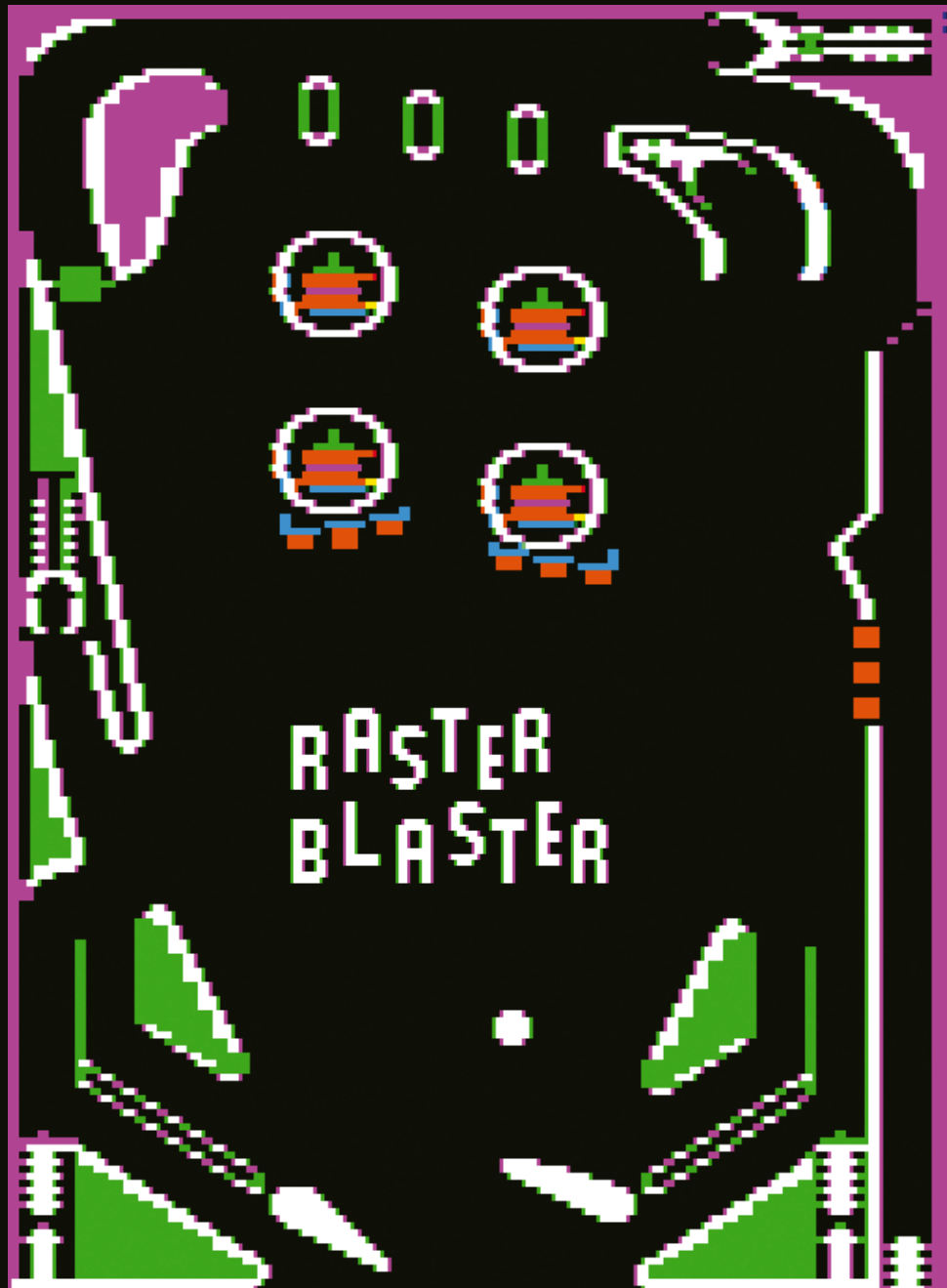
Prior to *Raster Blaster*, videogame pinball had a tendency to either get smashed into other genres – such as *Gee Bee*'s weird mash-up of pinball and *Breakout* – or end up not looking or playing like pinball at all, as evidenced by the risible *Video Pinball* on the Atari.

Raster Blaster was different. Here was a title that – within the limitations of the Apple II's hardware – wasn't trying to be an arcade game that happened to include flippers and bumpers. This was a simulation.

The table was broadly inspired by real-world table *Firepower*, and was oriented vertically. Although that

resulted in over half the screen being given over to high scores and logos, this added to the realistic nature of the table. Mostly, though, *Raster Blaster* impressed due to the feel of the game. Yes, modern eyes will spot clear shortcuts in the game's physics, and some odd ball movement here and there, but *Raster Blaster* sat head and shoulders above its contemporaries. And even today, Bill's game plays a decent game of pinball that doesn't feel too far removed from the real thing.

Post-*Raster Blaster*, videogame pinball was changed forever, and gamers soon got to enjoy the likes of *Night Mission* (by Bruce Artwick) and *David's Midnight Magic*. Bill himself pushed the pinball genre even further, eschewing the idea of further standalone tables and enabling players to craft their own in the ambitious – and rightfully highly-acclaimed – *Pinball Construction Set*.



PINBALL WIZARD

Bill Budge on the Apple II and *Raster Blaster*



What was it that originally attracted you to the Apple II?

Colour. That was the thing that swayed me from buying a TRS-80, or one of the other small business machines coming to market back then. But it took me about two months to get hold of one – there weren't many resellers in those days!

How did you find the machine for programming games?

Architecturally, the Apple II was very simple and open, so programmers could do things that probably weren't foreseen by Steve Wozniak. But audio on the system was extremely primitive – it was really hard to make sounds because there were no timers or interrupts. Still, the Apple II did at least have the most reliable floppy drive of those early home machines. The ones on the C64 and Atari were a nightmare.

What was the genesis of *Raster Blaster*?

Oddly, I was never really a pinball player before I started that game. But I was working at Apple in those days, and my colleagues were obsessed with pinball. I'd go to lunch with them, and they explained how pinball worked. Since I wanted to make the most amazing looking game I could on the Apple II, pinball seemed like the ideal fit.

Presumably, you didn't find inspiration from other videogames in those days?

Not really. There were a few other pinball games around at the time, but they had low resolution graphics and limited physics. And I'd, in fact, already made a simple pinball game by then, using code and techniques from my version of *Pong* on the Apple II. My biggest inspiration was Williams' *Firepower* – one of the all-time great pinball tables – on which I based the *Raster Blaster* table layout.

What technical challenges did you encounter when making the game?

The Apple II couldn't multiply natively or do floating point math. So a lot of effort went into using 16-bit fixed-point numbers to do things like update position and velocity, and rotate vectors when balls hit something at an angle. I used table lookup to calculate sines and cosines for rotating things in two dimensions.

Collision detection was also tough, and involved me constructing, by hand, a database that for each row of pixels on the screen listed the wall properties – material, position, and rotation – relative to the x-axis, which was constantly compared to the ball's position. My hand-coded table scheme probably accounted for half of the effort to build *Raster Blaster*!

Image: © Jason Scott



IE Mystery House

■ PUBLISHER: On-Line Systems ■ GENRE: Text adventure ■ YEAR: 1980

This game's cover art might put you in mind of *Scooby Doo*, but there are very real horrors lurking within this mansion. After venturing inside (using GO DOOR, due to the clunky early Eighties parser), you find yourself locked in, alongside several others. Soon, the number of people starts diminishing, and you find bodies lying around, having been dispatched in various nasty ways.

Developed by husband-and-wife team Ken and Roberta Williams, *Mystery House* was a pioneering adventure, in providing imagery alongside the text. Often, solutions are based around what you see rather than just what you read. And although *Mystery House* isn't that sophisticated and is full of dead-ends, it's a fascinating bridge between *Colossal Cave Adventure* and the graphical adventures that would become prevalent in the PC era.

IE Sabotage

■ PUBLISHER: On-Line Systems ■ GENRE: Shoot-'em-up ■ YEAR: 1981

You might well take a look at *Sabotage* and think: "That looks an awful lot like *Paratrooper*". And you'd be right. This game by Mark Allen has you control a gun turret at the foot of the screen while helicopters scoot about, dropping paratroopers. Should four reach the bottom (with you having likely dispatched many of their comrades), they form a human pyramid, leap aboard the turret and blow it up. Which all seems a bit elaborate and wasteful as a means of attack, but this is the world of videogames. And as for *Paratrooper*, it was *Sabotage* that came first.

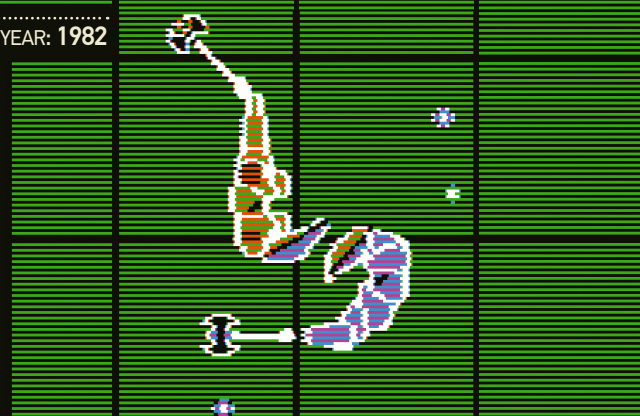


IE The Bilestoad

■ PUBLISHER: Datamost ■ GENRE: Fighting ■ YEAR: 1982

It's fair to say this Marc Goodman combat game is an oddball. Without a great deal of other fighting games to draw on, Marc decided on a top-down viewpoint. So rather than the subsequently typical side-on approach, *The Bilestoad* has you duff up opponents from above.

The controls are quite involved, and take time to get to grips with. Along with keys for turning, stopping and walking, you can move your axe and shield independently. The arenas you fight in add further complications by way of teleporters and speed-up discs. If it all gets a bit too much, pit two 'robots' against each other and settle back to enjoy the fight.

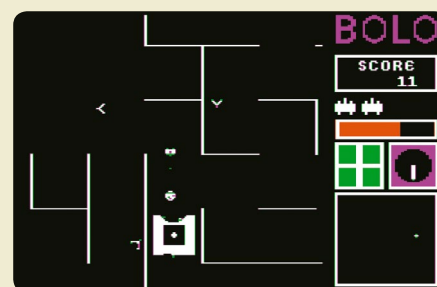


IE Aztec

■ PUBLISHER: Datamost ■ YEAR: 1982 ■ GENRE: Platformer/adventure



There's a lot going on in *Aztec*. It resembles yet another side-on arcade adventure, with a fedora-wearing kleptomaniac looking to 'liberate' bling from a deadly tomb. But the controls are, frankly, a bit mad – the system has separate keys for everything from running and climbing stairs to drawing a gun and rummaging around in a chest. Wrap your fingers around that lot and you still have to contend with monsters and environmental issues – clambering up garbage, blowing up walls, and not drowning in water. And even if you succeed in your quest, a repeat's not assured – the tomb's randomly generated every time you play.



IE Bolo

■ PUBLISHER: Synergistic Software ■ GENRE: Shoot-'em-up/maze ■ YEAR: 1982

'Sparse' is probably the word that first comes to mind on entering *Bolo*'s strange universe. On selecting a difficulty level and density, the game generates a simple maze containing enemy bases. Your aim is to trundle about, blow away enemy craft, and obliterate each of the bases by chipping away at its walls before firing on its core. Inexplicably, blowing up a base boosts your fuel reserves. Handy.

But what sets *Bolo* aside from most old-school arcade games is the controls. Your tank can fire while you're retreating at speed, and you can also turn the turret and shoot at an angle to your current direction of movement. That precision particularly pays dividends on higher levels, where previously sluggish enemies start moving as fast as you.

Choplifter

■ PUBLISHER: Brøderbund ■ GENRE: Arcade ■ YEAR: 1982

In 1980, arcade classic *Defender* introduced the idea of rescuing hapless civilians from a warzone while you blasted away at everything in sight. But its pyrotechnics and sci-fi trappings meant it always felt very much like an arcade game. By contrast, *Choplifter* – while entertaining and compelling – is comparatively bleak. You pilot a helicopter behind enemy lines, braving tanks and fighter jets, and blast buildings to free hostages. You must then land, grab as many hostages as you can, and make for safety. On each return, your enemy ramps up its defences, making subsequent trips increasingly perilous.

You're not rewarded for blowing up enemies – the score simply lists hostages in your helicopter, those saved, and those that have perished. And should the last of your choppers be shot down, it sits at the bottom of the screen in flames as the game states 'The End'.



FLYING HIGH

Dan Gorlin recalls his Apple II days creating classic title Choplifter



Why did you start working with the Apple II, and how did you find using the machine?

I started working with it because I had one! My grandfather loaned me his when I was selling a house, and, in all honesty, I wasn't really a fan. I found the machine very primitive. But I did like the fact you had complete control over the timing, so you could polish that aspect of whatever you were programming perfectly.

How did you start working on Choplifter?

When I was selling that house, I started goofing around with the Apple II – moving things around the screen. I'd been interested in helicopters, so I'd got one on the screen, and was trying to get the feel of flying right. In the end, I had to cheat with the physics to make it fun, but I think I succeeded in my aim of making it feel like a natural thing to play with for the player.

The key element of Choplifter is rescuing hostages. How did that idea come about?

This kid working on my car was a big fan of *Defender* and suggested I should add some people to rescue. So I walked to the nearest place with a *Defender* cabinet,

liked the rescue element, and started adding all kinds of little bits to my game. And at some point, I realised I could make some money out of it!

This was around the time of the Iran hostage crisis. Did that play into the topical nature of the game?

That was big in the news at the time and probably influenced the hostage aspect of the game – at least subliminally. But I wasn't really thinking too much about it, and that probably resulted in *Choplifter* being fun rather than overly serious.

Even so, there is an earnest undercurrent in the game, not least with the score, which merely lists survivors and deaths.

I don't like the idea of a score when what you're really trying to do is tell a story. So I didn't want you racking up points like in *Defender*. All that was important was knowing how many of the hostages got home safely. To me, the number of planes and tanks you blew up getting your people home was irrelevant, and so I didn't keep track of that. The only reason the enemies were there was to push the player through providing them with challenges as they played the game.

Airheart

■ PUBLISHER: Brøderbund
■ GENRE: Arcade ■ YEAR: 1986

This ambitious 3D arcade title finds you zooming about a watery world, blowing up robots, and grabbing mystical objects that allow you to enter a final battle. It was later enhanced significantly for 16-bit machines as *Typhoon Thompson In Search For The Sea Child*.



Karateka

■ PUBLISHER: Brøderbund
■ GENRE: Fighting ■ YEAR: 1984

Jordan Mechner's debut turned out to be a cinematic take on fighting games. Along with all the brawling, cutscenes are peppered throughout, showing the antagonist ordering his minions into battle, and the hero's love awaiting rescue.



Captain Goodnight And The Islands Of Fear

■ PUBLISHER: Brøderbund
■ GENRE: Arcade ■ YEAR: 1985

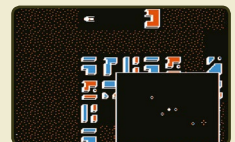
This *Bond* parody side-scroller comes with a healthy dollop of snark. Captain Roscoe 'Buzz' Goodnight battles his way to a doomsday device by way of foot, jet, jeep, tank and submarine, in a series of tough arcade sequences.



SunDog: Frozen Legacy

■ PUBLISHER: FTL Games
■ GENRE: Space exploration ■ YEAR: 1984

Although joystick-controlled, *SunDog* feels like a precursor to PC-based mouse-oriented strategy fare. As Zed, you zoom about space, visit cities and trade. It's slow going, but an ambitious, engaging title.



The Bard's Tale

■ PUBLISHER: Electronic Arts
■ GENRE: RPG ■ YEAR: 1985

This RPG classic started out on the Apple II before being converted to many other systems. The emphasis on simple exploration, combat, and puzzles means that although it seems unsophisticated today, it's still worth playing.





Ultima I: The First Age of Darkness

■ PUBLISHER: Origin Systems ■ GENRE: RPG ■ YEAR: 1981

We could have included a later *Ultima* entry in this list, and if you're a fan of role-playing games, you should probably play them all anyway. But we're going for *The First Age of Darkness* on the basis it was one of the most influential titles to grace the Apple II.

The game dumps you in a mystical realm where an evil wizard's enslaved everyone. It turns out, that this villain has got hold of the suitably (if unimaginatively) named Gem Of Immortality, meaning he can't be killed as his minions go around getting all stabby. Your aim: end his rule. No pressure.

From a visual standpoint, *Ultima* was ambitious for a 1981 game, switching between top-down roaming views and first-person dungeons. But, mostly, *Ultima* is important for generating the language used in so many subsequent RPGs. By the time the third *Ultima* arrived, you could select a party, and delve into a turn-based

combat 'battle screen' when scrapping. It and *Ultima IV* are usually cited as best-in-class on the Apple II; but, hey, we're **Retro Gamer**, so check out where it all began first.



DUNGEON MASTER

Ultima creator Richard Garriott fondly remembers his Apple II days



What was it that grabbed you about the Apple II?

I started out with a teletype terminal connected with an acoustic modem to a PDP11 in a neighbouring university's data centre. When the Apple II arrived, I was in wonder. Instead of invoking a command and waiting minutes for it to process, it could, in real-time, visually display to me all the fantasy worlds and other fantastical ideas I could think about to program. I immediately saw it as the key to the future – or my own future, at least.

How instrumental was the Apple II in *Ultima's* creation?

I think without the Apple II, *Ultima* never would have existed. As much as I enjoyed what came before and the other computers around at the time, I found all those systems comparatively harder and less fulfilling to tear into than the Apple II. With the Apple II, you could dive right in under the hood and figure everything out. You could kind of keep the totality of it in your mind, and truly master the entirety of the machine.

How did *Ultima* come to be?

I was working in a computer store, and the owner noticed me working on a game in the back, *Akalabeth*.

I'd converted it from a teletype version, but added first-person corridors, so you could see them from your point of view. The guy running the store said it was better than anything else out there and that I should publish it – and so I did. It then came to the attention of national distributors, but really *Akalabeth* was a technical demo. There's no story, no winning and no end. But it put me through college, and that was when I started the first *Ultima* game. I thought that if a game I never intended anyone to see – much less pay for – could put me through college, surely I could start over and do a much better job with one designed for public consumption!

What's your relationship with the Apple II today?

As PCs took off and the Apple II became antiquated, I didn't pay much attention to mine. But then I was knocked by a keynote speech I saw that said these machines were 'disappearing' into obsolescence, meaning the best games could be lost and forgotten. I realised I had no way to look at my *Ultima* games or *Akalabeth* – these years were lost to me. More recently, of course, emulation has closed the gap, but after that conference, I worked with my Apple IIs, and went on a buying binge for spare parts, to ensure I could keep them operational indefinitely.



The Oregon Trail

■ PUBLISHER: Brøderbund ■ GENRE: Simulation ■ YEAR: 1979/1985



Although primarily an educational title, *The Oregon Trail* also happens to be one of the least-forgiving classic-era Apple II games you're likely to play. It finds you regularly making life-or-death decisions. In essence, it's an early take on resource management – and it's also the only game of its day that abruptly wipes out one of your travellers with a nasty case of dysentery.

Perhaps surprisingly, despite *The Oregon Trail* being widely associated with the Apple II, it in fact started life on a mainframe computer, way back in 1971. Creator Don Rawitsch made the game available on the Minneapolis Public Schools time-sharing service, opening it up to many thousands of students – revolutionary at the time. The game was rewritten for the Apple II in 1979 as *Oregon*, and then reissued and revamped in 1985 as *The Oregon Trail*, with vastly improved graphics, along with expanded hunting and shooting elements.



Beyond Castle Wolfenstein

■ PUBLISHER: Muse Software
■ GENRE: Stealth ■ YEAR: 1984

No, not *that* Castle Wolfenstein, although this Muse classic served as inspiration for the hugely-influential PC 3D shooter. Here, you're stealthing it up in a Nazi bunker, aiming to locate a bomb, dump it outside the room where Hitler's holding a meeting, and legging it before the thing explodes. Like its similarly excellent – and pioneering – predecessor, *Castle Wolfenstein*, this game marries action and strategy. Sure, you can shoot enemies, but doing so wastes ammo. You can alternatively pull a gun and pilfer a guard's kit, or even stab a soldier, wear their uniform, and saunter about in disguise.

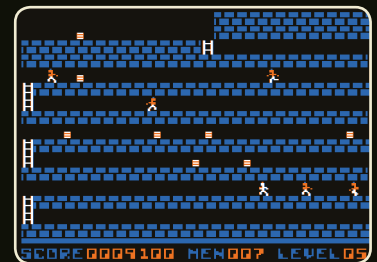
Lode Runner

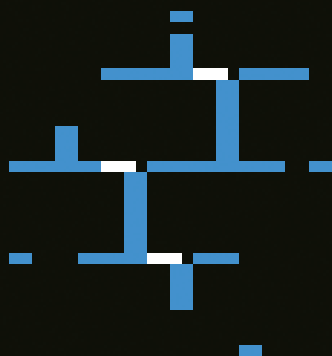
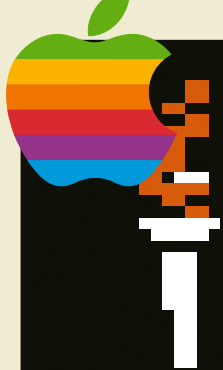
■ PUBLISHER: Brøderbund ■ GENRE: Platformer ■ YEAR: 1983

Much like *The Oregon Trail*, *Lode Runner*'s history goes beyond the Apple II. The game began life on the Commodore PET, as a project cocreator James Bratsanos referred to as being about the “beauty of the algorithm”. In essence, his system was designed to be thrown at any designed level rather than being about pure gameplay. But even this early take was recognisably *Lode Runner* – platforms and ladders; and a hero chased by enemies you could trap by digging holes left or right of your current position.

At university, the game was converted to VAX, whereupon Doug Smith got involved – and at the insistence of his nephew rewrote the game for Apple II.

After buying the rights from James, Doug's first crack at the Apple II version, *Miner*, was rejected by Brøderbund. But a major revamp with superior controls and pixel-level motion resulted in the classic game we know and love today.





Prince of Persia

■ PUBLISHER: Brøderbund
■ GENRE: Platformer ■ YEAR: 1989

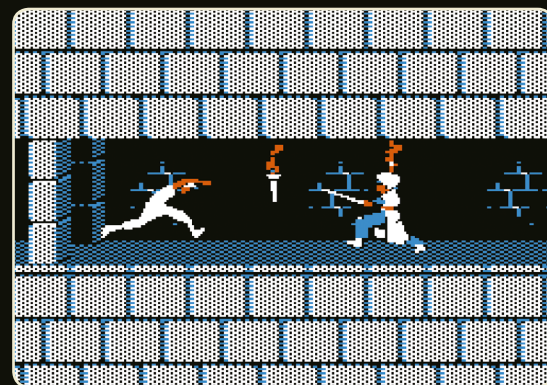
Several games on this list are from the early days of the Apple II, when creators were first experimenting with the system. But it's hard to see how any title could have topped our list other than Jordan Mechner's platform adventure. It was, without doubt, a late entry to the Apple II, not finding release until 1989, by which point even Jordan himself admits the platform was dying. His reason for sticking with it? "The Apple II was a platform I understood – a machine you could push," he explains. "And that was satisfying... It was a lovely machine."

Taken at face value the component parts of *Prince Of Persia* don't scream classic. The plot is hackneyed, involving a heroic protagonist battling his way to defeat an evil wizard. And the gameplay is, at its core, a conventional platformer, where you leap about, throw switches to open doors, and try to not end up impaled on spikes some lunatic's left sprinkled about the place.

It's a good thing, then, all the great stuff happens on the screen. In short, *Prince Of Persia* is all about the execution. Everything within the game has been honed to perfection. The visuals are superb, with rotoscoped animation that affords the protagonist and other characters a lifelike fluidity. The introductory animation nudges the game into cinematic territory, and composer Tom Rettig even managed to get a decent score out of the Apple II's woefully-underpowered sound chip.

In terms of gameplay, *Prince Of Persia* similarly shines. Whereas many retro platformers are crude in terms of controls, bar the odd bit of inertial movement, *Prince Of Persia*'s hero can run, duck, leap across gaps, pick his way across the floor and hang from ledges. You need to know precisely when to make use of an action, and soon come to realise the entire game's effectively one massive puzzle, relentlessly trying to off the hero.

Then there are sword fights that punctuate the platforming action – and puncture the hero, if you're a bit rubbish. There's a clever mix of infinite lives and 60-minute timer – the princess will be glancing nervously at her timepiece if you keep getting killed, given that each death plunks you at the start of the current stage. And then there's a section where you leap through a mirror only to be confronted by an evil apparition twin. Now *that* kind of thing definitely didn't happen in the likes of *Impossible Mission*...



FIVE REASONS IT'S GREAT

- 1 Like *Karateka*, *Prince Of Persia* is infused with a distinctly cinematic feel, not least with its animated filmic intro.
- 2 From huge leaps to little wobbles on hitting unstable ground, the protagonist's movements add a sense of realism to the game.
- 3 Nuanced controls give you a fighting chance against the game's pixel-perfect demands: you can leap, take careful steps, or hang from platforms.
- 4 The game's platform larks and exploration are punctuated by swordfights. These look great and also ramp up the tension.
- 5 The Apple II's sound chip wasn't a force to be reckoned with, but this game actually has a decent score.

MAKING A MASTERPIECE

Jordan Mechner talks us through the development of *Prince Of Persia*



Tell us about the origins of *Prince Of Persia*.

I loved the first ten minutes of *Raiders Of The Lost Ark*. That kind of running, jumping action where you feel like the hero is in great danger and escapes by the skin of his teeth was what I wanted to recreate. I wanted to bring that excitement to gaming, to the Apple II platform. It was a machine I was really getting to grips with and it was the most natural thing for me – as an amateur animator, film fan and gamer – to try to do.

Tell us about the rotoscoping techniques...

Rotoscoping was a technique I first used in *Karateka* and it's basically something animators have been doing since the very early days of film. For *Prince Of Persia*, I videotaped my brother running, jumping, and doing lots of other things, then went through a process to select frames and transfer them in silhouette to the computer. The hard part then, as now, was to integrate the animations into the game in a way that struck the right balance between responsive controls, and fluid animations that look good visually.

Why choose an Arabian theme for your game?

The *Prince Of Persia* story came out of a desire to find a distinctive setting that wasn't already familiar from other games. A lot of games had sci-fi or medieval, sword-and-sorcery settings, but the *Arabian Nights* theme hadn't been done in a long time – this was a few years before Disney's *Aladdin*. And it was a good fit for the kind of character I wanted to create – your basic plucky underdog who's totally outnumbered and outgunned.

Why did you include sword fighting sections?

I wanted to get that back-and-forth, classic Hollywood-sword fighting feel, where the blades clash high and low in a kind of balletic rhythm. The model was the climactic

fight, in the 1938 film version of *Robin Hood*, between Errol Flynn and Basil Rathbone. If you play the DVD in freeze-frame, you can spot the animation frames I used for *Prince Of Persia*.

Was there anything you planned that didn't appear in the final game?

Part of my original plan for *Prince Of Persia* was to include the level editor on the disk, so players could create their own *Prince Of Persia* levels. I spent months creating a full-featured level editor – but in the end, the only person who got to enjoy using it was me.

Were you pleased with how it turned out?

I think what surprised so many was the fact that the Apple II at the time was an old platform. By the time I'd finished *Prince Of Persia* in 1989, the computer was more than ten years old. I felt at the time – and I still feel this now – that the first *Prince Of Persia* definitely moved up and even surpassed the hopes that I'd had for the game in the beginning, when I first conceived of it in 1985. But at the same time I was really starting to see other games and other platforms that could go beyond it, technically, in terms of what it was capable of, so in that sense I felt like I was kind of trying to keep up with the market that was evolving even as I was programming the game.

Were the ports crucial to the game's success?

It's thanks to the various ports that *Prince Of Persia* is still remembered today. A few years later, the PC port was done by an internal Brøderbund team with Lance Groody as programmer, and it took full advantage of what the PC could do including VGA graphics, sound and music. The Mac version went further, with different versions of the graphics for every type of Mac screen. The original version didn't sell many copies, because the Apple II was a dead platform by the time the game released in 1989.

PC Engine

Import Icon

As NEC's diminutive console reaches its 30th anniversary, we remember how its combination of exoticism and arcade appeal gave birth to the market for import games. Join Nick Thorpe for a look back at this legendary piece of hardware...





"IF YOU HAD MONEY AND WERE A HARDCORE GAMER, THE PC ENGINE WAS THE COOLEST SYSTEM YOU COULD OWN"

Julian Rignall

Japanese console manufacturers didn't have an easy time of breaking into the European gaming market – but then, it can't be said that they put much effort into it.

Unlike in North America, where Nintendo and Sega had dedicated operations, the NES and Master System were introduced into European territories by third-party distributors in 1987. The consoles occupied an awkward middle ground in the gaming market. The hardware was more capable than the 8-bit home micros, and competitively priced, but software was slow to arrive and cost as much as full-price games for the 16-bit computers.

So when the May 1988 issue *Computer & Video Games* featured a report on a tiny Japanese wonder-console capable of sublime arcade-perfect games, you'd have been forgiven for being sceptical – especially given that the author of the 'Mean Machines' column had a penchant for enthusiastic hyperbole. "Forget Nintendo and Sega, they are not even a spit in the ocean in terms of power and gameplay," Tony Takoushi gushed in his two-page feature introducing this technical marvel. "I have used all the superlatives in the past and yet none of them begin to be adequate when you come up against the *most powerful console in the world*." It's often said that if something sounds too good to be true, then it usually is. However, hype will always

» A special adaptor was needed for multiplayer games like *Bomberman '93* due to the PC Engine only having one controller port.



» The PC Engine's colour handling allowed the original *Lords Of Thunder* to outshine its Mega-CD conversion.

beat scepticism when gamers are concerned, and the seed was planted in the minds of British gamers – the PC Engine was something to watch.

Designed by Hudson Soft and manufactured by electronics giant NEC, the PC Engine actually lived up to the claims made about it. Roughly the size of three CD cases stacked atop one another, the machine could display sprites that were larger and more colourful than the other consoles, and it could display more of them. With six audio channels it delivered richer sound than the Sega and Nintendo machines, and the games came on thin cards. However, with no UK model available, players had to take Tony's word for it – and with that in mind, we wondered how he first came to witness the machine.

"I used to get games and consoles direct from Japan and the USA and review them for UK magazines in the early days when few (if any) others did so. It was expensive with phone calls and shipping but very exciting times," says Tony, remembering his writing days. "I saw the PC Engine in a Japanese magazine while I was working for Virgin Mastertronic and mentioned it to Frank Herman, one of the directors, who was about to go to Japan on business. He returned with one and a few games – an RPG, *Drunken Master* and a Namco platformer. Wow!" Despite the fact that the console was impossible to obtain in the UK, Tony continued to cover the PC Engine in his Mean Machines sections. "I was very lucky the editor Tim Metcalfe was awesome and understood the excitement and impact of these reviews, and letting people know what was coming (hopefully) to our shores."

The decision to run with the coverage despite the machine's lack of an official presence in the UK proved to be the right move. "The response was *insane*, everyone wanted to get it but NEC had no plans to release in the UK, they were looking to a US launch was best I heard. CVG got inundated with mail asking for more info and reviews," remembers Tony. However, not everybody welcomed the attention that the console was gathering. "I decided to call NEC and see if they were going to release/confirm arrival of the

11 YEARS,
7 MONTHS
& 4 DAYS

passed between PC
Engine's launch
(30 October 1987) and
its final game, *Dead Of
The Brain 1 & 2*
(3 June 1999).



PC Engine



► PCE in Europe. I eventually got through to the relevant person at NEC in Europe who said, 'So it was you that did the review... I'm seriously thinking about putting a contract out on you for the heat you've caused us!'"

Like the public, members of the press quickly started paying attention to the new machine based on the coverage it received in *CVG*. *The Games Machine* featured a PC Engine cover story in issue eight, which included repeated references to the Mean Machines coverage, and *ACE* also began to cover the machine. The attention from multiplatform magazines was expected, but even the dedicated ZX Spectrum magazine *Crash* would find itself giving the PC Engine a few pages before the Eighties were over. The console was simply too exciting to ignore.

Zzap!64 editor Julian 'Jaz' Rignall was also paying attention. "I first heard about the PC Engine in early 1988 through *Computer & Video Games* magazine's original Mean Machines column, which was written by freelancer Tony Takoushi. He was very enthusiastic about the system and its handful of games, and my interest was well and truly piqued by his hype," remembers the veteran journalist, who despite



» *Gate Of Thunder* was available as a pack-in game for the American Turbo Duo alongside *Bonk's Adventure*, *Bonk's Revenge* and *Bomberman*.

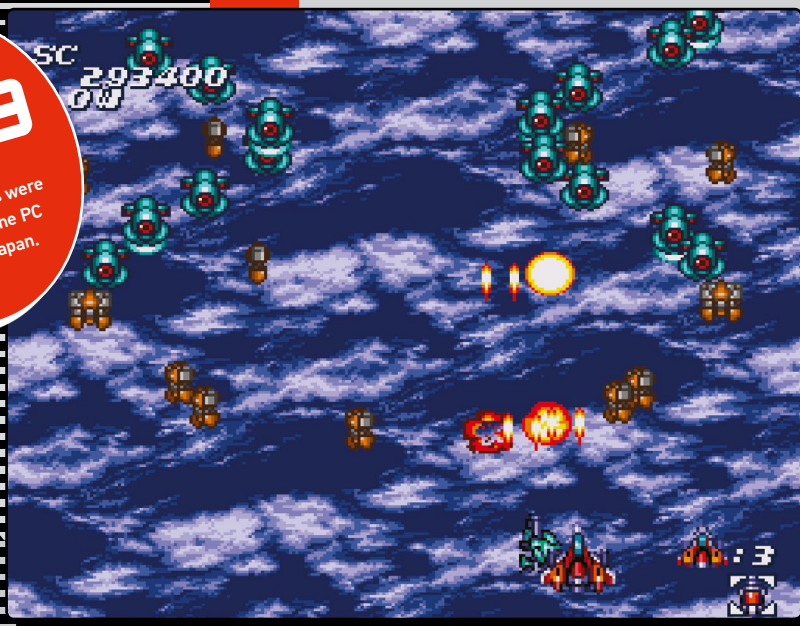
being editor of a Commodore 64 magazine, was starting to be drawn away from the home computers. "At the time I was seriously getting into consoles – I had both an NES and a Master System – and this new-generation machine sounded very promising indeed."

Julian moved to *CVG* during 1988, and by the end of the year he was a key part of the Mean Machines column – and with that move came his first chance to actually check out the PC Engine. "I persuaded *CVG* editor Eugene Lacey to let me expense a PC Engine for the office, and a week or two later it arrived." The experience wasn't quite what Julian had expected, however. "I was really excited, but unfortunately it came with just two games: *Shanghai* and *Kato-Chan Ken-Chan*. While the latter was quite amusing for its crude sense of humour, neither game blew me away. They were just okay."

So what was it that turned this opinion around? "A couple of weeks later we got hold of *R-Type*, and that was absolutely sensational," Julian explains. "I loved the coin-op, so getting the chance to play what felt like a carbon copy at home was quite the revelation. That game really showcased the PC Engine's potential, and immediately made me a huge fan of the system. Over the following months more really high-quality games were released, including *Galaga '88*, *Legendary Axe*, *Alien Crush*, *Space Harrier* and *Dragon Spirit*. All helped make the PC Engine – in my eyes at least – the single most desirable games machine of the period."

669

HuCard and CD-ROM games were released for the PC Engine in Japan.



BEGINNER'S GUIDE

Here's a guide to what you'll need to play the complete library of PC Engine software

CARD

- 2-20 megabit capacity
- Region locked

HuCARD HuCARD

280 GAMES

- Playable on all PC Engine consoles
- Connector pins are at the top of the card when artwork is the right way up

SUPER GRAFX

SUPERGRAFX

5 GAMES

- Only playable on SuperGrafx consoles
- The connector pins are at the bottom of the card when artwork is the right way up

CD

- Up to 650 megabit capacity
- Region-free

CD-ROM² SYSTEM

CD-ROM²

120 GAMES

- Playable as standard on all PC Engine Duo and Super CD-ROM² consoles
- System Card 1.0 or higher required on original CD-ROM² add-on

**"THE PERSON AT
NEC SAID, 'SO IT
WAS YOU THAT
DID THE REVIEW...
I'M SERIOUSLY
THINKING ABOUT
PUTTING A
CONTRACT OUT
ON YOU!'"**

Tony Takoushi

As well as delivering a selection of unmatched arcade conversions, the PC Engine was breaking new ground with the introduction of CD-ROM technology. This was by no means cheap, but for your trouble you were able to play the best home conversion of the popular Capcom arcade game *Street Fighter. Bikkuriman Daijikai* was less accessible to non-Japanese audiences, but the heaps of speech and CD audio showed the possibilities of this high-capacity storage medium. In introducing this system, CVG also made a famous comparison. "I thought that it might be a good idea to show how small it was by including something in the shot that everybody could relate to. Fortunately, I'd just been across the road to Arkwrights, the local corner store, to buy some afternoon snacks, and just happened to have a packet of Skips at hand," remembers Julian. "We'd said numerous times that the PC Engine was diminutive, but that picture really helped readers understand just how truly tiny it was." Indeed, it captured the imagination of readers to the point that our own Editor Darran Jones still describes the console as being as big as a packet of crisps.

By this point, players had received about a year of PC Engine coverage and had their wallets primed and ready. "Judging by the mail we received, it seemed that many of CVG's readers were very excited about the PC Engine – which wasn't particularly surprising considering how incredibly enthusiastic we were when we wrote about the console and its games," says Julian.



» RPGs like *Cosmic Fantasy 2* benefit massively from the shift from HuCards to CD-ROM.

"Most people wanted to know when it was going to be officially launched, how much it'd cost, and what games would be released in the UK." The only problem was NEC – the company was silent on all of those matters.

What happened next was unprecedented in the videogaming market at the time. With a clear demand for PC Engine products and no official supply of them, entrepreneurial types began to import the machines directly from Japan to sell on in their own regions. Magazines were suddenly stuffed with adverts for import game retailers, eager to sell you this previously elusive console. Importing presented some new considerations for players, who had to know if they needed a SCART or PAL machine, as well as get an appropriate step-down converter for

110V power. However, even factoring in the price premium associated with importing, a PC Engine would cost you £200 or so – less than an Atari ST, and about half the price of an Amiga 500. This wasn't just limited to the UK market, either. The most sophisticated PC Engine import operation of the time seems to have been the French company Sodipeng (Société De Distribution De La PC Engine), a subsidiary of accessory manufacturer Guillemot International which sold imported consoles with unique French instructions and packaging, and even warranty support. ▶

A record
**20
MEGABIT**
HuCard was used for *Street
Fighter II: Championship
Edition* (that's 2.5 times
the size of the next
biggest card).



SUPER CD-ROM² 255 GAMES

- Playable as standard on all PC Engine Duo and Super CD-ROM² consoles
- Super System Card 3.0 or higher required on original CD-ROM² add-on



ARCANE CD-ROM² 11 GAMES

- Arcade Card Duo required on all PC Engine Duo and Super CD-ROM² consoles
- Arcade Card Pro required on original CD-ROM² add-on



LD-ROM² 11 GAMES

- Only playable on a Pioneer LaserActive with PC Engine expansion module
- Contains high-quality analogue video
- Region-free

SIZE MATTERS

The PC Engine is a famously dinky piece of gaming hardware – here's how it stacks up against other devices

PC ENGINE

Length: 14cm
Width: 14cm
Depth: 3.8cm

NES CARTRIDGE

Length: 13.3cm
Width: 12cm
Depth: 2cm

MEGA DRIVE

Length: 28cm
Width: 21.2cm
Depth: 7cm

ATARI LYNX

Length: 27.3cm
Width: 10.8cm
Depth: 3.8cm

XBOX CONTROL PAD

Length: 12.7cm
Width: 16.5cm
Depth: 7.6cm

PS TV

Length: 6.5cm
Width: 10.5cm
Depth: 1.36cm

3 MAIN CHIPS

make up the PC Engine – the HuC6280A CPU/sound generator, the HuC6270 GPU and the HuC6260 video encoder.

"I ACTUALLY LOVE THAT WE DIDN'T HAVE AN OFFICIAL RELEASE BECAUSE WE GOT ALL THE TITLES IN THEIR PUREST FORMS"

Paul Weller

► One of the customers funnelled into the PC Engine market by the press and importers was Paul Weller, who today runs the PC Engine Software Bible at pcengine.co.uk, one of the best online resources for fans of the system. "It was the first machine that truly felt like the arcade experience. Previously I had a Sega Master System and while it was great, the limitations were obvious. But the PC Engine ran fast and smooth with loads of sprites and amazing sound. It was a turning point in consoles for me," Paul reflects. "The physical design of the machine was also highly appealing, and because the games were all imports it added an exotic air to them."

The import market didn't go unnoticed. Within a few months, NEC would take out advertising that warned users about imported PC Engine consoles – they were likely modified without NEC's consent and the company wouldn't offer warranty support or repairs for them. Its intent as a deterrent against import purchases was obvious, but went largely unheeded by players. As far as the public was concerned, the PC Engine was available and NEC's endorsement was no big deal – after all, the company still hadn't come forward with any release plans to make waiting worthwhile.





Ironically, the reason that the warnings were being placed was because those official plans did exist – NEC was just keeping quiet about them, since North America was going to be tackled first. The decision makes some sense, since Nintendo had already established videogame consoles as a hot product in the region, and the European market's various languages and customs present additional challenges. It ultimately turned out to be a bad move, squandering a market primed and ready for the system for the potential to make even more money. The PC Engine was released in North America in late 1989, redesigned and rebranded as the Turbografx-16, and an initial batch of PAL units simply called Turbografx made it as far as manufacturing. However, the system bombed with the American audience and NEC lost confidence in the system's European prospects, quietly pulling the plug on its unannounced release and offloading its stock to Telegames.

The system's failure to launch in Europe resulted in a decline in coverage for the system. "It was a real disappointment when we realised the machine wasn't ever going to officially hit UK shores, but by that time the Mega Drive and Super Famicom had arrived and were beginning to take up the lion's share of our focus," remembers Julian. "It's not that I lost interest in the PC Engine per se – I've always loved the machine – but

there was just a lot more excitement surrounding the Super Famicom and Mega Drive as we headed into the Nineties. CVG's readers also seemed to be far more interested in hearing about Nintendo and Sega's new machines because they knew that it was only a matter of time before they were officially launched in the UK." When *Mean Machines* launched in October of 1990, the Amstrad GX4000 took the PC Engine's cover spot because while it was unproven, its official release meant that it actually had a chance of attracting some advertising.

As an import console, game prices would always be high, as Paul remembers: "It did mean I'd have to be quite particular and careful about what I spent my money on.

But luckily I think my core collection from back then was very solid." As mainstream coverage of the PC Engine in the UK press went into decline, players would eventually have to look elsewhere for information. "I'd regularly read (i.e. look at the pictures) the Japanese magazines as well to get the lowdown on the latest titles," notes Paul. "I was also lucky enough to have a couple of friends who would have the resources to buy a lot more games than I did, so there was always a chance for me to experience a range of new titles that I couldn't afford."

While the lack of an official release did present some unusual obstacles, the import-only nature of the machine only added to the appeal for those players that had already bought in. "I actually love that we didn't have an official release because we got all the titles in their purest forms without censorship or having to put up with tacky



» *Bank's Revenge* put the system's power to use with excellent cartoon animation, like this fishing gag.

name changes and bad cover art," says Paul. "I was really into the manga/anime style back then – it was something fresh and new and hard to get hold of in the UK at the time, so I tended to gravitate towards anything with that kind of art on it. *Schibin Man* was one of my early pickups, as well as *City Hunter* as I was a pretty big fan of the comic."

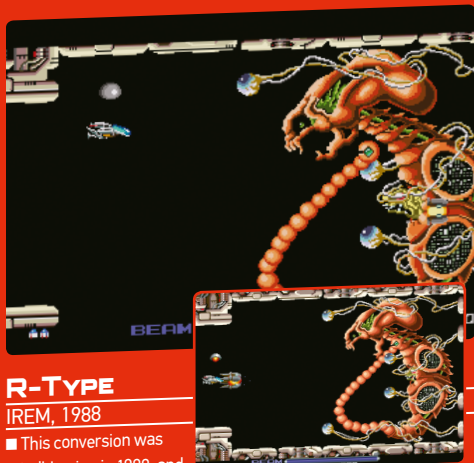
As we moved into the Nineties, the nature of the PC Engine market changed considerably – but with coverage now the domain of fanzines like *Electric Brain*, UK players won't have noticed unless they were already invested. The



» We couldn't resist a modern day re-enactment of the Skips comparison. Truly, we stand on the shoulders of giants.

ARCADE PERFECT?

The PC Engine was famed for its conversions – here's how some notable examples compare to the originals



R-TYPE
IREM, 1988

■ This conversion was mindblowing in 1988, and it's still impressive today. While it's not quite a 1:1 fit with the arcade game graphically, you'd be hard-pressed to notice unless you put the two side by side. The sound is also slightly weaker on the PC Engine, which is common – most arcade games were using FM sound by this point.



GALAGA '88
NAMCO, 1988

■ The original arcade game uses a vertically-oriented monitor, but the PC Engine stays horizontal with some small black borders making for a square playfield. The arcade game generally exhibits higher quality sprite work with superior shading, too. Thankfully, the cosmetic changes don't mar an excellent blaster.



OUT RUN

NEC AVENUE, 1990

■ While the PC Engine version of *Out Run* is generally considered to be the best of the early bunch of coin-op conversions, the arcade machine was a sprite monster and Hudson's hardware could never realistically hope to match its processing power. There's no sprite scaling and fewer sprites on screen overall with this version, and this opening stage misses the sea on the left-hand side of the road. Still, it's an admirable effort to say the least.

¥24,800
PC Engine's price on launch
(30/10/1987).

¥57,800
CD-ROM² System's price on
launch (4/12/1988).

► emergence of the Super CD-ROM² format in 1991 sent HuCard releases into decline, as the CD format allowed NEC some advantages over the explosively popular Super Famicom, but Paul was still along for the ride. "The PC Engine was always designed to have the CD add-on, and as such it felt like a natural progression of the machine, unlike the Mega-CD," he notes. "I was lucky enough to buy a CD unit from a friend (after playing titles like *Monster Lair* and *Ys I* just had to have one) so I was building up a good library of both CD and HuCard games, but mostly focussing on the CDs."

While some great arcade conversions were released on disc including *Pomping World* (better known as *Pang*) and *Gradius II*, the high capacity of CDs was more commonly used for

digital comics, RPGs and adventure games with lavish animation and lots of speech. "CD-based games opened up a whole new world which was truly exciting to be a part of. We now had stunning anime-style visual scenes, amazing music and the storage capability that allowed for some incredible games," says Paul, and there's no denying the quality of what's out there. Original games like *Gate Of Thunder* and *Winds Of Thunder*, the *Cosmic Fantasy* games and *Castlevania: Rondo Of Blood* were simply fantastic, and the CD-ROM system attracted more RPG conversions such as *Might & Magic III* and *Dungeon Master*. It's hard to disagree when Paul says "To me, a PC Engine without a CD unit is only half a machine."

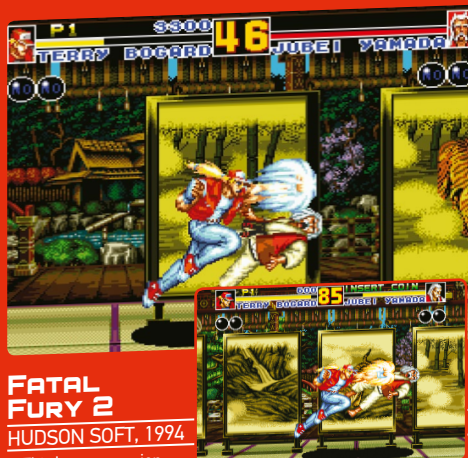
Still, one last play for the arcade lover's cash was made in the form of 1994's Arcade Card, a CD-ROM add-on which gave the PC Engine an additional two megabytes of RAM – a preposterous amount by the standards of the day, more suited to next-generation machines. While it did allow the system





GOLDEN AXE RENOVATION, 1990

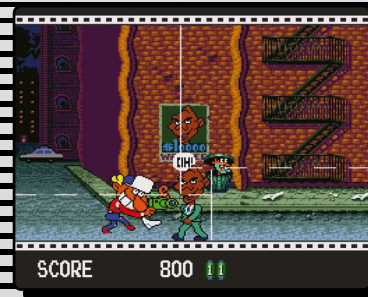
■ While many PC Engine arcade conversions are great, stinkers like this ensure that you still need to do your research. CD-ROM owners must have felt well and truly ripped off – while some nice arranged music and animated cutscenes utilise the extra storage well, the sluggish controls and laughable graphics ruin the experience.



FATAL FURY 2

HUDSON SOFT, 1994

■ This late conversion comes surprisingly close to the Neo-Geo original – the PC Engine sprites aren't quite as big and don't scale, and some background detail is lost. However, it knocks spots off the Mega Drive and SNES versions, which it frankly should do considering the cost of an Arcade CD-ROM² system capable of running it.



¥9,800
Super System Card 3.0's price
on launch (25/10/1991).

¥17,800
Arcade Card Pro's price on
launch (12/03/1994).

"I THINK THE PC ENGINE WAS INSTRUMENTAL IN KICKING OFF THE UK IMPORT GAME MARKET"

Julian Rignall

to host the best conversions of Neo-Geo games, it didn't revitalise the system like the advent of Super CD-ROM² did – just 11 dedicated Arcade CD-ROM² games came out.

Paul is still heavily involved in the PC Engine scene – as well as his website, he has worked on homebrew games, fanzines and much more. For him, flying the PC Engine flag is a labour of love. "Retro gaming is big these days, but most of the chat is Nintendo this or Sega that. The PC Engine is a bit of an underdog and it's nice to supply information that allows people that are new to the machine to discover how great it really is," he explains. "The PC Engine isn't my only beloved system, but it's the one that needs more appreciation."

Those who were lucky enough to experience it at the time need no convincing of the PC Engine's quality, of course. Tony still remembers being drawn to "the speed, colour, size and accuracy of the conversions coupled with the tiny size of the console itself," and has a list of favourite games a mile long, including *Gunhed* ("For all the men among you who could take the bullet heat!"), *Monster Lair* ("Awesome music track, one of the

best ever") and *SonSon II*. "I took it down to Jeff Minter and we literally holed up for two days playing this game between us and chowed down, one of my best memories from that time!"

"I have very fond memories playing the early PC Engine arcade conversions like *Galaga '88*, *Dragon Spirit*, and *R-Type I* and *R-Type II*. I also spent a lot of my time mastering the two pinball games, *Alien Crush* and *Devil Crash* – both of which are superb," Julian says enthusiastically. "Then there's *Vigilante*, *Splatterhouse*, *Pac-Land* and *Side Arms*. Oh! And I can't forget *Legendary Axe* too: a classic platformer that features some fantastic music."

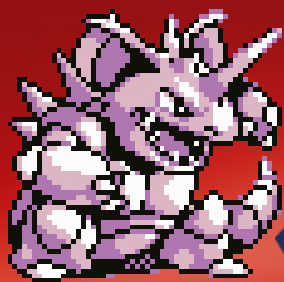
It seems strange to talk about the legacy of a console in a market which never officially had it, but the PC Engine actually seems to have created a legacy by virtue of its non-release. Can the PC Engine be credited with the rise of import gaming in the UK? "I think yes, that would be fair to say, the PC Engine started it all, then it continued with Mega Drive and SNES and more esoteric systems like the X68000 from Sharp," says Tony. "I think



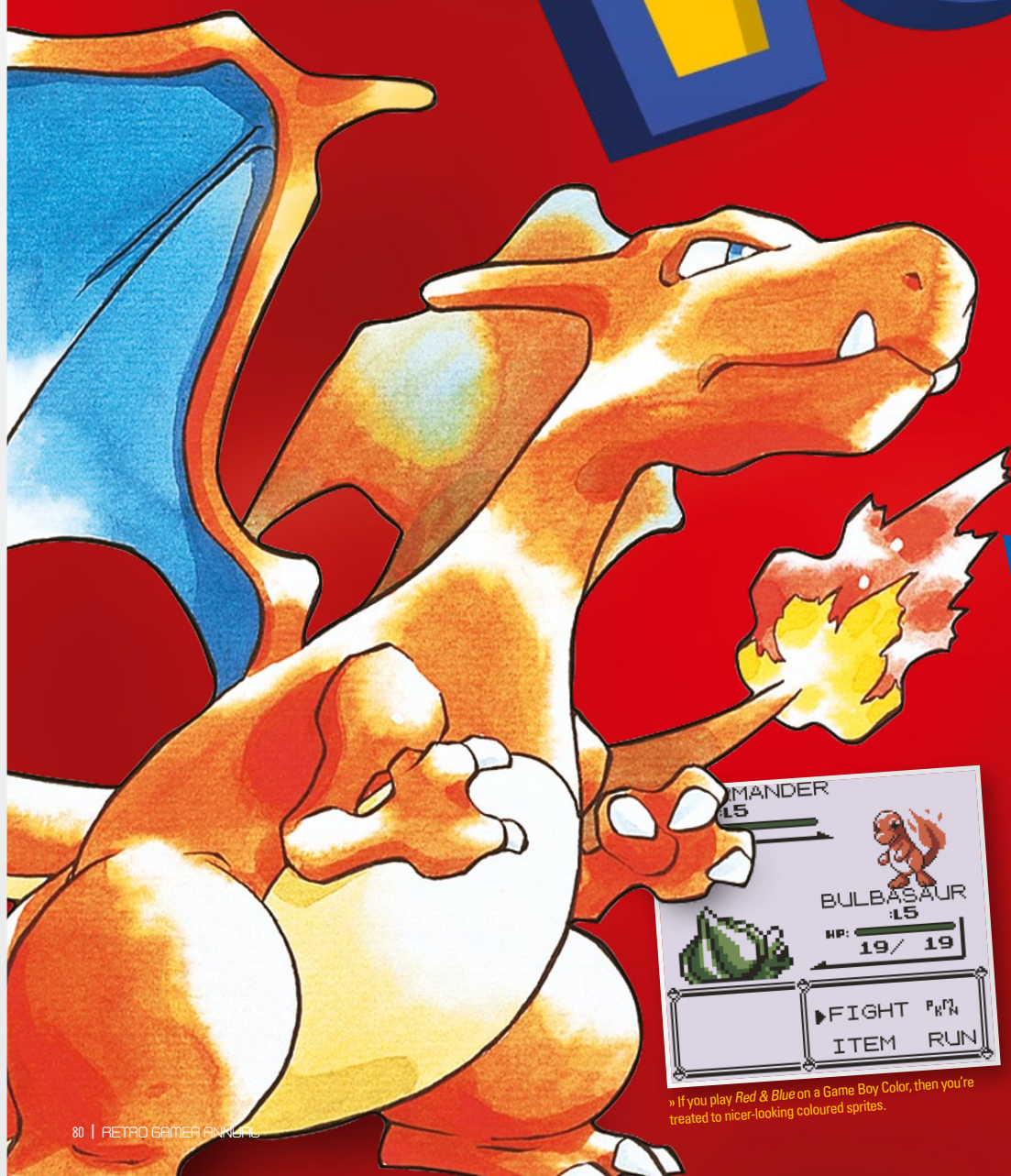
» Jaz Rignall counts *The Legendary Axe* as one of his favourite PC Engine games.

the PC Engine was instrumental in kicking off the UK import game market – buoyed in part by the journalistic hype from magazines like *CVG*," agrees Julian. "If you look at early grey import advertisements in magazines of the period, they were very much focused on the PC Engine. If you had money and were a hardcore gamer, the PC Engine was the coolest system you could own."

Ultimately, that's what drove players to the system – we're always searching for the latest and greatest ways to experience our games, and it doesn't matter how we get them. The PC Engine was the turning point at which consoles overtook computers as the most exciting hardware to play games on, and neither a foreign language nor high costs would deter some of us from having it. ★



POKÉ



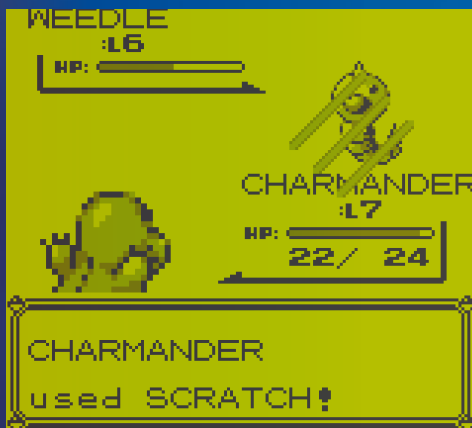
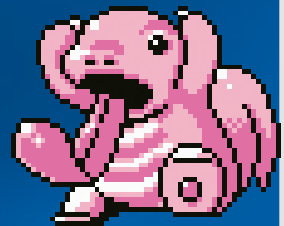
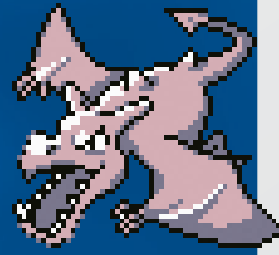
Not just a gaming phenomenon but a multimedia one, Pokémon exploded in the late Nineties and is still going strong today. Luke Albigés grabs his Pokédex and sets out to document the hatching, training and evolution of the legendary franchise

Well, do you? No need to play coy – *you know what we're talking about.* Do you want to be the very best? Like no one ever was? The thing about *Pokémon's* many elements is that they're all interconnected, and just seeing screenshots or the logo is often enough to send that opening G power chord ringing out in your head, to evoke visions of Ash turning his cap backwards in the anime or to remind you of that shiny Charizard card you just couldn't get for love nor money back in the day. *Pokémon* launched on a worldwide scale not just as a videogame but as a multimedia offensive. Supported by a TV show, merchandise and other products following the huge success of its original Japanese launch, there was just no way it could fail. It was *everywhere* and in the late Nineties, you could barely move without seeing Pikachu's beaming little face somewhere.

But while that might have been the start of the phenomenon as we know it, our story begins earlier. Well, a lot earlier – all the way back in 1990, in fact, or even *earlier* if you want to track the origins of the most

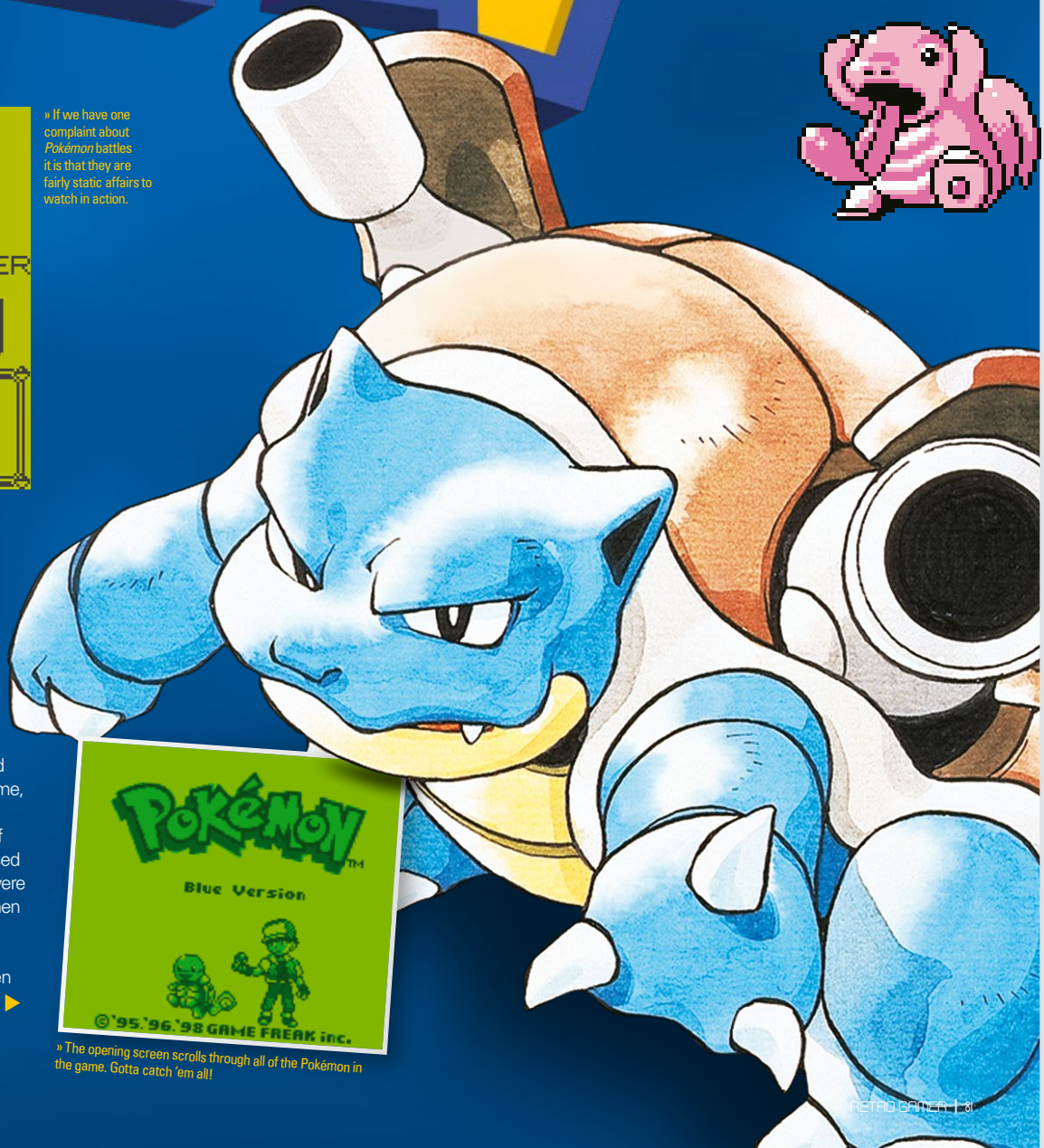
» If you play *Red & Blue* on a Game Boy Color, then you're treated to nicer-looking coloured sprites.

POKÉMON



» If we have one complaint about *Pokémon* battles it is that they are fairly static affairs to watch in action.

important people behind the franchise. “Mr [Satoshi] Tajiri was the founder of Game Freak and I was a friend of his when I was a student,” recalls veteran Game Freak artist Ken Sugimori, the art director and character designer on pretty much all of the games and who has been responsible for official art assets. “We used to play videogames together and that’s how we started this company – Mr Tajiri started a company and I joined. Back in 1983, Mr Tajiri started selling this little booklet for ¥200 and it was sold only in very specialist bookstores. It talked about strategies for arcade games because, at the time, there were no home consoles. A few people would visit these stores and see the book, and I was one of them. As we talked, we became friends and discussed how arcade games were often very similar – if we were developing them, what would we do differently? When we started, some of the readers were programmers and they had the skills and access to the hardware – that’s how we started in producing videogames. Then Mr Masuda joined and our first game was *Quinty*.” ▶



» The opening screen scrolls through all of the Pokémon in the game. Gotta catch ‘em all!



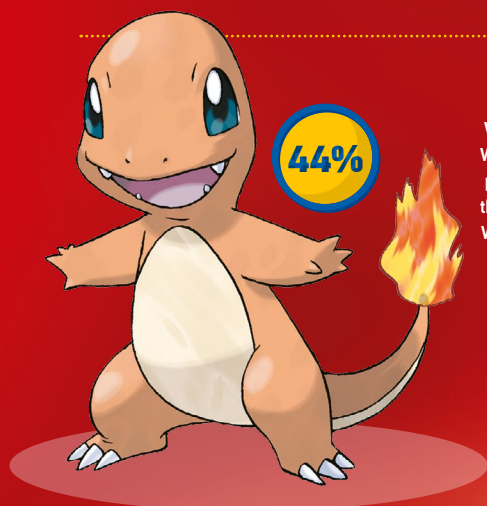
Just The Start

"Who was your first Pokémon?" we asked, and this is what you said...



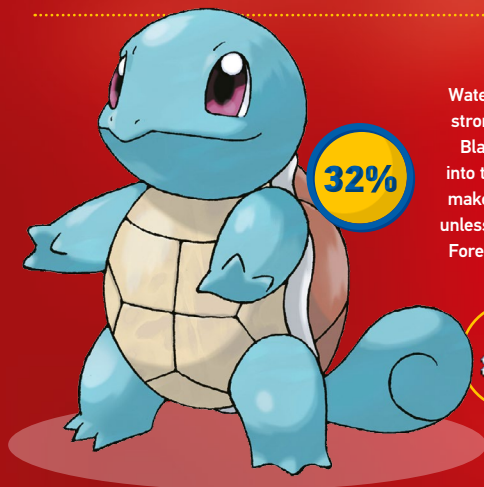
Bulbasaur

We're surprised this leafy little dude didn't fare better, if we're honest – it can make short work of the first two Gyms and its unique split typing gave it a strong set of options in battle. It also evolves quickest of the three starters, reaching its blooming awesome final stage at Level 32 rather than Level 36, although its reliance on status moves may put off those who just want to bang their heads against opponents.



Charmander

While we're not entirely surprised that He Who Would Be Charizard came out on top in our poll, picking the Fire type as your starter is actually the hardest option as it's weak to both Rock and Water, the types used by Brock and Misty in the first two Gyms. Still, with the highest attack power of the three, it's hard to argue that the Charmander line isn't a powerhouse once you overcome that first hurdle.



Squirtle

Water types have something of a history of being strong defensive options in *Pokémon* games and Blastoise – Squirtle's final evolution – also fits into this category. As such, it's not always easy to make headway (plus you're likely to stall at Misty unless you've bagged yourself a Pikachu in Viridian Forest), but Squirtle's depiction in the anime was always going to make it a fan favourite.



► *Quinty*, or *Mendel Palace* as you might know it, was a simple action-puzzle game released for the NES in 1989, its completion heralding the start of something much bigger, much more ambitious in scale, something that we know today as *Pokémon*. The vision started out small, originally targeting a creature count of around 50 monsters but with that number growing steadily as new ideas were hatched and improved hardware and coding techniques emerged around them. In fact, it sounds as though the team always had more ideas than would be possible to fit into the memory capacity of a Game Boy cartridge. "From the inception of the idea to the completion of *Red & Blue* took a total of about six years, so a long time!" smiles current producer Junichi Masuda, whose involvement on earlier titles was mainly in coding and penning the music of the original games, later taking on directorial and production duties on every mainline release. "We started by creating loads of different Pokémon designs, then we reduced that down to the favourite 150. That took a lot of effort. After that, once we were happy with our designs, we started working on the moves they could each use. This process probably accounted for around three of those six years. It was quite the task! There wasn't an initial plan of which Pokémon would get which moves – we designed the Pokémon then designed the moves, then decided which would fit well together as a gradual process."

Masuda goes on to confirm our suspicions that the team was dreaming far bigger than what a cartridge could accommodate, but it wasn't just a question of storage – it was a case of the ideas being beyond the realms of what the Game Boy hardware could do. "It was difficult. The thing we wanted to focus on at the start was communication and trading but it was difficult to do that as we could only transfer small amounts of data between two consoles," he explains. "Communication itself was a big challenge – the technology just wasn't there but we really wanted to do it, so we fought to get it in there. That was an overriding theme – it was a fight against capacity, a fight against what we could fit onto the cartridge. We had designed these 150-odd Pokémon to get in as well. But then we had the problem of movement, so we came up with the idea of the map tiles being the things that moved while



» Game Freak threw in nods to the real world as in-jokes, these Easter Eggs would persist throughout the series.



“The thing we wanted to focus on at the start was communication”

Junichi Masuda



» Red is about to tackle one of the most difficult conundrums in all of gaming: which starter to pick?

the character was animated in place. With these ideas, we found ways to squeeze as much in as we possibly could. I like the Game Boy as a machine but trying to work with all these challenges and make a game that anyone could get into and enjoy was difficult.”

Bear in mind that we're still talking about the original Japanese releases of *Red & Green* at this point – localisation hadn't even been considered, and the studio ran into some serious issues when tasked with preparing the game for release outside of Japan. “Originally, it was kind of based on how people feel about and view different colours. The clearest split for us was between red and green but when we started thinking about abroad, it was clear that wasn't the case. In America in particular, it's red and blue that are considered ‘opposites’, if you will,” Masuda reveals, although there were somewhat more pressing issues standing in the way of taking the game abroad, which is what led to the gap of over two-and-a-half years between Japanese release and US launch, not to mention another year to reach Europe. “With the capacity problems mentioned earlier, one thing that we found is that English takes up more space on the cart than Japanese. We had no room! Everything was so full on that cartridge and there was little space to implement English at the time we created it. So we had a lot of memory problems to solve – things like changing Pokémon names and even the name entry screen, which was all designed in Japanese. To change that to accommodate English was really difficult and something we hadn't considered when first designing the game. We really had to spend a lot of time working on all of this.”

Like No One Ever Was

Pokémon theme singer Jason Paige on his contribution to the series' success

How did you come to land the gig performing the original Pokémon theme?

It was one of 100 sessions a year that I did for various clients. I had worked for this music house before and as always sang my face off for the demo session. Soon after, we recorded a few changes that eventually were approved for the show. Shortly after the success of the TV show, the album *2.B.A. Master* was recorded when the full version of the theme song appeared, along with *Viridian City*.

Was everything set in stone when you came to record it, or were you able to add any personal flourishes?

Every session involves a collaboration between singer and producers, writers and the client to find the best delivery. In the session, I sang multiple versions of the line ‘gotta catch ‘em all’ with many melodies, giving them a variety of choices. I riffed out in the bridge and augmented some lines to amplify emotion. Though I didn't get credit as a writer, I believe everyone in the room is responsible for the product.

Were you aware of the brand at the time, or given any source material to get a feel for it?

I was aware of the brand through some news articles. And we had examples of the Japanese TV show to watch and catch the vibe.

Did you have any idea how huge Pokémon would become, and how iconic the theme would go on to be?

Every session is a roll of the dice hoping that the effort results in the most happiness for the most people. Often there are other indicators like celebrity involvement, big producers, writers, networks that promise to make a product big and it doesn't go anywhere. I've learned to be in the moment – serve the creative task at hand and move on to the next one. Water the seed and wait for the fruits to appear. And they're still coming off of these seeds planted 18 years ago.

Would you describe yourself as a fan of Pokémon? Do you play/enjoy the games, and indeed videogames in general?

I was an arcade kid playing all of the old-school games. *Space Invaders*, *Missile Command*, *Donkey Kong*, *Q*bert*, *Night Driver*. And at home, I had Atari, Intellivision and Coleco games and now I am a *Pokémon Go* player and fan. It far surpasses my childhood arcade games. Its multiple choices and outcomes are way more exciting than the single path games of my youth. There are no right answers of how to be the very



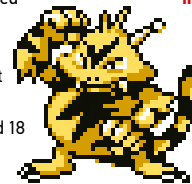
best. Each individual has a unique path to be that master. Just as each *Pokémon* has a unique path to its most evolved state.

How do you feel the theme sits among the rest of your portfolio?

It's right at home with the *Lego Mania* theme song that I wrote mid-Nineties and other popular jingles like the Pepto Bismol *Nausea Heartburn Indigestion* anthem. Subway's *Eat Fresh*, Mountain Dew's *Bohemian Rhapsody* and others are right in line with it. And with the addition of the new *Pokémon GO* theme song available at PokémonGotheme.com – the perfect companion for the next generation of players and *Pokémon* lovers. I also do magic and balloon sculpture so kids have many reasons to love me. *Pokémon* makes people happy and helps them expand their imaginations. I have a portfolio of work that seeks to enhance the imagination as well through sharing my unique truth and voice.

Finally, anything you'd like to add about your involvement with Pokémon?

I believe *Pokémon* to be a game that enables critical thinking as people are challenged to develop unique strategies to excel that they then can share with other players. These lessons easily transfer to their own lives. As new technologies like AR are integrated, the game and brand will adapt for even greater adventures. I can't wait to see what future technologies are added. And the updates should make it more exciting as well, adding more functionality and interactivity between players. It's all so incredible on a physical level as it demands movement not just through neighbourhoods but through entire regions. It's also made quite an impact on children's health, getting them out into the world, increasing learning for kids with autism and adding much social value surrounding its explosion.



Evolution Tracker

Each new game or generation in the Pokémon series has brought with it significant changes and improvements



GENERATION I

RED/GREEN/BLUE (1996)
YELLOW (1998)

■ Pokémon was released in Japan for the first time in 1996 and proved immensely popular. Despite the games' protracted development, there were still several major bugs and glitches, many of which are ironed out with a third *Blue* version arriving later in the year. This would also update visuals and audio, providing the basis for the international release as *Red* & *Blue* that rolled out between 1998 and 1999. Another revision, *Yellow*, emerged slightly later, the game modified a little to be more in line with the plot, events and style of the anime.



GENERATION II

GOLD/SILVER (1999)
CRYSTAL (2000)

■ A lazy sequel would have been easy to do, but instead, Game Freak iterated on everything that made the first game stand out. Two new types were introduced – Dark and Steel – in an attempt to rebalance existing ones, while the shift to a real-time system that governed Pokémon and NPC availability was incredible. It also saw the debut of shiny Pokémon with variant colours, pre-evolutions of existing creatures, held items for use during battle, genders and breeding, as well as splitting the original Special stat into attack and defence values in line with physical stats.



GENERATION III

RUBY/SAPPHIRE (2002), EMERALD (2004)
FIRERED/LEAFGREEN (2004)

■ This gen brought in many staples of the modern Pokémon game – Abilities added passive traits to each Pokémon, Natures altered base stats and Double Battles allowed for two-on-two encounters, plus Contests gave a non-battle aspect for pacifists. It also saw a shake-up to the way each Pokémon's potential was calculated, marking the shift to the IV system still used to this day. *Emerald* put a real focus on post-game content with the excellent Battle Frontier, while *FireRed* & *LeafGreen* brought the original games up to date with these more complex new systems.



» Pokémon Red & Blue received full remakes for the Game Boy Advance.



» Pokémon Centers are a staple of the series, offering free medical care for all.

► Some of this could be seen in the game at the time, with character limits on menu terms, character, creature and item names and even a few attacks. Space, both on the screen and on the cart itself, was at a premium, hence these unusually short chunks of text, as seen elsewhere in the game actually, as Masuda highlights. "Another example is the Pokédex. In the original Japanese versions, you just had one screen and everything was displayed there whereas in the US and European versions, it had to be changed to have two screens with the names and details of the Pokémon. Doing all these great changes took a long time, so that was what contributed to the delay. We never expected things to be so popular abroad, either – we had no idea this would be such a phenomenon so that was really amazing. But yes, it took a long time to make all the changes needed to get the game into different markets."

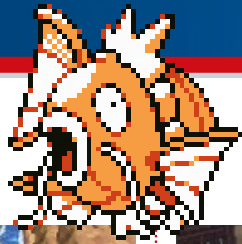
After all this extra work, *Red* & *Blue* released in the US towards the end of 1998. With the anime, the trading card game and more toys games and other assorted tat with the Pokémon logo slapped on it releasing alongside it, the buzz was huge and with no European launch date so much as hinted at by Nintendo at the time, would-be Trainers would have to go out of their way to grab import copies of the game – some indie game stores even imported these in bulk to sell through at



a premium. "Back at school, a friend of mine had brought back *Pokémon* from America, where he had gone on holiday," recalls Joe Merrick, webmaster of Pokémon fansite Serebii.net – a resource many like-minded Pokémaniacs have been using for well over a decade. "It hadn't been released here, though the anime was running on Sky and so when he showed the game, I was intrigued, watched the anime and pestered my mother to import the game."

Surrounded as it was by a hype machine on a peerless scale, you might think that this wasn't a matter of quality – for those who weren't fans, the choppy, low-budget animation of the TV show and hoards of cheap collectible junk certainly could have suggested as much, at least. Despite its seemingly low production values, the anime series was entertaining in its own way, luring in new fans with its colourful characters and easy-to-follow stories, but the games have always been superb. "I think the quality had to be there," muses Merrick. "Without it, people wouldn't have felt encouraged to play the game. While *Red* & *Blue* were a bit buggy, they had a solid foundation, and were complete fun to play causing a lot of people to jump in. However, the factor of the anime and cards also had a huge impact to the reach of *Pokémon*. Many people didn't play the games and just focused on the cartoon or the cards, but like the games, the quality definitely had to be there for it to take off."





GENERATION IV

DIAMOND/PEARL (2006), PLATINUM (2008)
HEARTGOLD/SOULSILVER (2009)

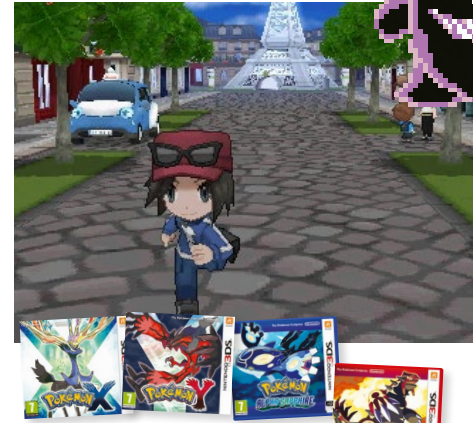
■ The major change ushered in by this generation was the physical/special split, where move power would be governed by the Attack or Special Attack stat on a case-by-case basis. The jump to DS hardware also allowed for other improvements, such as 3D environments and contextual use of the touchscreen, not to mention true online functionality for the first time. *Platinum* iterated upon this further, while remakes *HeartGold* and *SoulSilver* brought the second-generation games up to date with all the new features of the current mainline games.



GENERATION V

BLACK/WHITE (2010)
BLACK 2/WHITE 2 (2012)

■ Quality of life was order of the day here, and we're thankful for it today. Primary alterations included the removal of usage caps on TMs, a freeform Elite Four structure and not having to worry about the effects of status conditions such as Poison outside of battle, while new battle modes like Triple and Rotation Battles brought in even more new ways to play. Online play was also improved and Global Link for trade and battle really added to the package. It's the only generation where we've seen direct numbered sequels, too.



GENERATION VI

X/Y (2013)
ALPHA SAPPHIRE/OMEGA RUBY (2014)

■ Another leap to more powerful hardware meant another big set of changes, with the death of four-directional movement and the introduction of full 3D environments being chief among them. A new type – Fairy – was also added, the first since the second generation. Greater visibility on previously-hidden stats and values was another nice quality of life improvement, while Mega Evolution updated existing Pokémon with new, more powerful versions during battle, something that was taken even further in the third-generation remakes that followed.

“It took a long time to make all the changes needed to get the game into different markets,”

Junichi Masuda

But take off it sure as hell did, the multi-limbed approach meaning that there was always something going on in the world of *Pokémon* – game development may be time-consuming but when you've got new TV episodes dropping, trading card sets being released, toy lines coming out and Arceus-knows what else helping to fill the gaps between the mainline videogame releases, it's easy to maintain a high-profile media presence. “We do have various staff involved in different things and we always think about these when developing a game,” confirms Masuda. “We really want to think about how we can develop beyond the game and widen things once it's finished. For the card game in particular, we've got Creatures Inc. working on the game itself and we discuss with them how best we can expand on the game there and how the new Pokémon we're creating might fit in with their plans.” He goes on to explain the difficulty in such coordination between multiple teams and companies, especially when game release dates can't be easily altered. “As we develop the game, we get the TV, TCG and animation teams in to play it so that they have a better idea of what the world, the characters and the Pokémon are like,” adds Sugimori. “We're all creating the characters and

the settings together so that they're consistent across movies, games and trading cards.”

As was to be expected, sequels to *Red & Blue* came thick and fast, but not before Game Freak could establish something that would go on to become almost traditional for *Pokémon* releases – a third game to complement the original pair of releases, originally in the form of *Yellow* (or *Special Pikachu Edition*, to give it its full title) which bridged the gaps between *Red & Blue* versions and was tweaked to tie into the events and characters of the anime. *Crystal*, *Emerald* and *Platinum* all filled similar roles in their respective generations, although it stopped there – *Black & White* didn't exactly lend themselves to the naming conventions of this trend (honestly, who would buy *Pokémon Grey*?) and got direct sequels instead, while *X* and *Y* were long rumoured to get the trilogy treatment with *Z*, although all the stuff that has emerged that follows legendary Pokémon Zygarde has instead found its way into the imminent seventh-generation releases, *Sun & Moon*.

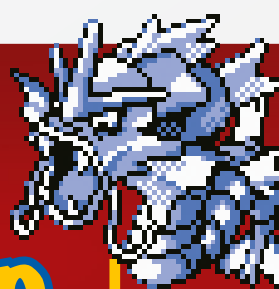
Each game, while still rooted in the core structure used in *Red & Blue*, has made great strides in

A New Dawn

The *Pokémon* story isn't over just yet...

Pokémon Sun & Moon, was released in November 2016, and was not only a tribute to the original *Pokémon* games that started the entire phenomenon, but also added new innovations. The game boldly did away with Gyms – a staple of the series since the beginning – replacing them with puzzle-based Trials, and some of the original 150 Pokémon have been reimagined with new ‘Alolan’ forms. Vulpix, Dugtrio, Meowth and Raichu all have variants. *Pokémon Ultra Sun & Ultra Moon*, a significant update, will be released in November 2017.





Science of Pokémon

Raising the perfect Pokémon – there are myriad factors at work under the hood and true masters will need to be on top of all of them



IVs

Short for Individual Values, these hidden stats dictate the potential of a Pokémon. While randomly generated on capture, these values are a lot easier to manipulate via breeding, with parent Pokémon passing on a set number of these values to its offspring, which can be increased by having one breeding partner hold the Destiny Knot item. Chain breeding, while time-consuming, can therefore lead to hatchlings with perfect stats.

Natures

While breeding for great IVs, you'll also want to make sure you end up with a Nature that is beneficial to the Pokémon in question without hurting its other stats too much. Alakazam, for instance, can happily roll with a Modest nature as boosting Special Attack in exchange for a cut to its already-awful Attack. A 10 per cent buff to a beneficial stat is huge and there's almost always another than can be sacrificed to get it, meaning the neutral Natures are rarely the way to go.



EVs

It's Effort Values this time, referring to the stat boosts granted by battling against different types of Pokémon. Every opponent defeated adds one or more points to a stat, with every four points granting a one-point boost to that stat at Level 100. This isn't infinite, mind – there's a cap at 510 points and 255 to any given stat, allowing for up to 63 points to be added to stats of your choosing or a broader spread of smaller boosts.

Moves

While you might think attacks will be the last thing to think about, that's not always the case. Certain moves can only be learned via breeding – and in some cases complex strings of chain-breeding across multiple species – which can add yet another variable into the mix. For the most part, TMs and tutors can be used to supplement 'natural' moves and get the perfect results, but there will be some instances where breeding for Egg Moves is the only way to get the attacks you want.

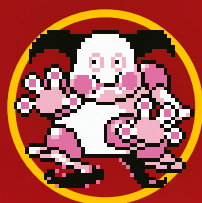


Abilities

With each Pokémon having between one and three passive Abilities, getting the right one is important, if not crucial depending on the creature in question. In some case the difference is negligible or there is only one option in the first place, and that makes life a little easier. But for others, the optimal Ability is the difference between competitive viability and storage-box-filler.

Held Items

Nearly there now. One last thing to consider is which item each Pokémon on your team should hold. These will often tie into existing strengths and game plans, although many of the outliers also serve as viable options on the right Pokémon – switch in a Rocky Helmet Ferrothorn against a Mega Kangaskhan and you'll see what we mean. Choice items, ironically, lock you into only the first move used while offering a bonus to Attack, Special Attack or Speed but this requires a moveset tailored around it.



Team Balance

You'll need more than one great Pokémon if you *really* want to be the best, and synergy is important. You need to ensure that as many weaknesses are covered as possible, all major threats are checked with a counter and support Pokémon are on-hand to give a helping hand. Aim to pack one defensive and offensive Pokémon for special and physical attacks, leaving you two spots on the team to cover weakness and support.

“If you added like 300 or so new monsters, that'd just be too many”

Ken Sugimori

► terms of improving quality of life for players, which can make it hard to go back to those older games after being spoiled by so many minor improvements in more recent ones. “I look back on them fondly, for sure, but replaying them is a tricky proposition,” Merrick tells us in discussion of returning to the original games today. “So often when I go back to play them, so many of the modern conveniences in it are just not there and make playing a slog. For example, in *Pokémon Red, Blue* and *Yellow*, you had no idea what a move did in-game unless you had an external guide. Sometimes playing the old games without the conveniences and features of modern games just causes me to think, ‘How did we play these games?’ Once I erase that from my mind, though, I can still enjoy and play through them happily.”

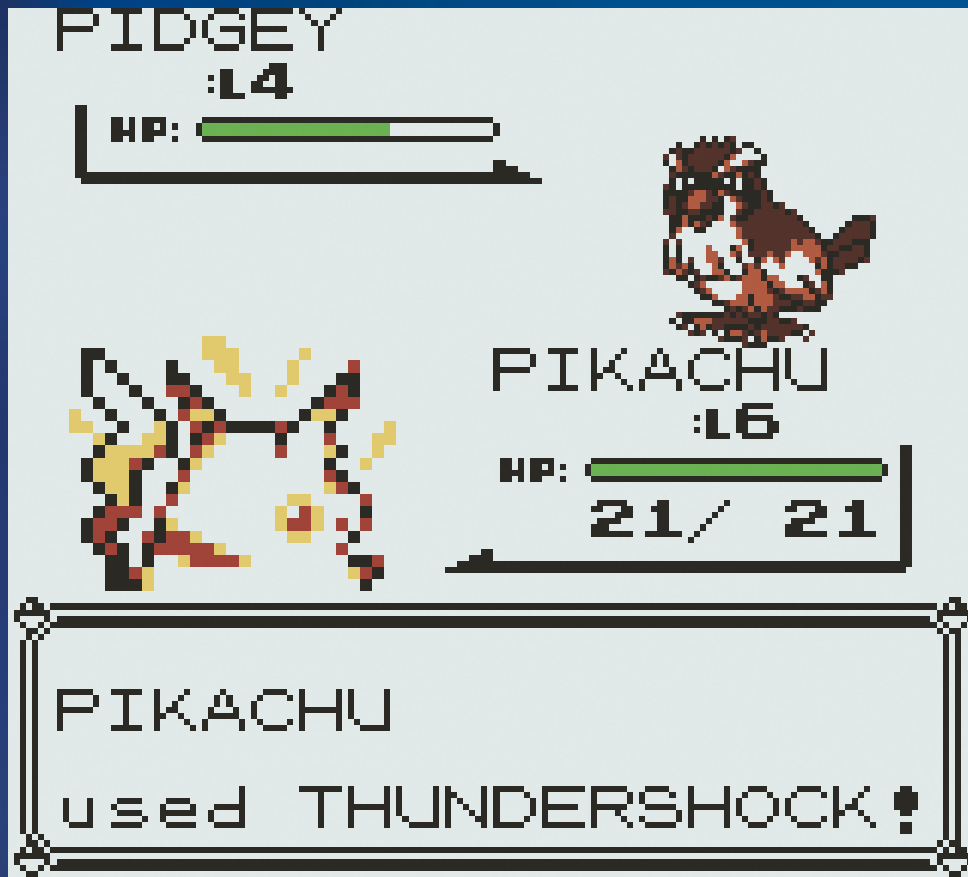
Even then, it's not just these minor convenience tweaks, with each new generation expanding the strategic aspect of the game, not least with every new generation bringing with it a whole new selection of *Pokémon*. “The reason why there are about 100 Pokémon added per game is not that we can't come up with the ideas, especially when we have new staff – everyone can come up with unique ideas,” Sugimori explains. “The number is set by the duration of the project. Plus, if you added like 300 or so new monsters, that'd just be too many – we have to think of the balance of battles.” The same is true of introducing new types into the mix, which is why only three new ones have been added to the initial 15 since launch. “By adding even one more type, it definitely makes the gameplay more complicated so when we did that, we had to really look into the battle balance,” Sugimori tells us. “With new moves, there's an infinite combination. If we can solve that problem, we can always add more types – it's not impossible.”

Having been on board since the very beginning and been more attached to the series than most thanks to



» We all named our rival stupid names, right? Here our character takes on the dreaded Doobrie.

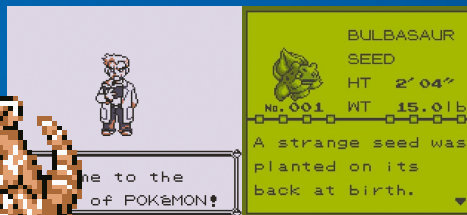




» Sprites were redrawn for the Yellow edition of the game, in order to bring the designs in line with the anime and artwork.

his ongoing hard work with Serebii.net, Merrick is as well-placed to discuss the significance of the series as anyone else you might care to mention – he has dealt with the franchise in all its guises on a pretty much daily basis, with a weekly workload that is pretty staggering for a fan project. “Sometimes it’s as little as five hours, others it is pretty much 155 hours,” he laughs. “It all depends on what is going on in the franchise. As time has gone on, not only have I focused more on the quality of the site, but more stuff is happening in *Pokémon*. In past years, I would typically have a lot of times where I had nothing to do; as I have a policy of never skipping more than one calendar day in a row on the news updates, it got tricky to a point of having to contrive reasons to update. Now, though, I rarely have this issue. In 2015, I updated on 331 of the 365 days, and on the other days I was typically working on something else.”

There’s so much to love about *Pokémon* that it saddens us to hear the blinkered views of those who base their opinion of the franchise on the colourful promotional material and frankly rosey cartoon that emerged while it was still young enough to be considered a fad; before the franchise had even had a chance to prove itself and long before it had evolved into one of the complex RPG series made. “People think that *Pokémon* is a game for children but I believe that’s a misunderstanding,” says Sugimori, and we’re inclined to agree – look beyond the presentation around it, peer deeper into its near-bottomless strategic complexities and you’ll find an RPG deserving of far more respect and credit than it often gets. But while some can be harder to convince of the series’ merits, those who are comfortably on the *Pokémon* Express make up an expansive player bases that spans



every age group and demographic imaginable, as you probably saw recently when *Pokémon Go* brought fans of all ages out of the woodwork in search of virtual creatures in the real world. “The community is by far my favourite thing about *Pokémon*,” Merrick tells us. “Aside from a few elements within it, it’s one of the friendliest communities around. People go out of their way to help others to find Pokémon. The game by design, has mandated to get people together to battle and trade, and it has continued to do that. There are people alive today because their parents met due to *Pokémon* and that is utterly incredible to me.”

“Its impact back in the Nineties was phenomenal,” he closes. “It was everywhere and everyone was playing it. I honestly never thought we’d see anything like that again. Then, *Go* happened and once again, *Pokémon* was everywhere. Whether or not we’ll see an equal of that again? It’s hard to say. The industry is far more volatile these days than it was back in the Nineties, and far more saturated. *Yo-kai Watch*, while huge for a few years in Japan, has diminished and, just hasn’t taken off over here. I am unsure if we’ll ever see a series permeating so many facets of media at once and be a phenomenon like *Pokémon* ever again.” ★

Special thanks to Kalpesh Tailor and Emma Bunce of Nintendo for making this article possible.

Who's That Pokémon?

Are you a Pokémon Professor, or just a chump? Take our test to find out...

1



2



3



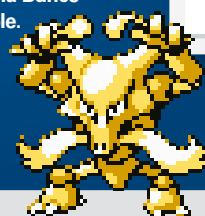
4



5



Answers: 1. Bulbasaur 2. Magmar 3. Snorlax 4. Articuno 5. Mew



Virtua Fighter

The characters in this revolutionary game might look boxy today, but in the mid-Nineties they were the most convincingly animated characters arcades had ever seen. Join Nick Thorpe to find out how Sega AM2's developers brought a whole new level of realism to the fighting genre...



In The Know

- » PUBLISHER: SEGA
- » DEVELOPER: AM2
- » RELEASED: 1993
- » PLATFORM: ARCADE
- » GENRE: FIGHTING



If you ask what the first 3D fighting game was, most people with any kind of a clue will tell you it was *Virtua Fighter*. Even the Academy of Interactive Arts And Sciences, when detailing its special award to Yu Suzuki, describes the game as having spawned the 3D fighting genre. The only problem with that is that it isn't strictly true.

You've probably never played *4D Sports Boxing*, a 1991 sports simulation from Distinctive Software. It wasn't a bad game back in its day – the low-polygon fighters looked a long way from human, but moved pretty convincingly. Still, it failed to make a lasting impact on the market; 3D boxing games wouldn't be popularised until the arrival of 3D-capable consoles later in the decade. Sega had also made a couple of attempts at introducing some form of 3D fighting game to the market, albeit without the benefit of polygons. *Holosseum* simulated a 3D environment using a curved display and is best forgotten, while *Dark Edge* used sprite scaling to simulate depth, and offered players full

Fighting Coaches



YU SUZUKI
Director and producer



JEFF BUCHANAN
Designer



MICHAEL LATHAM
Executive producer,
32X version



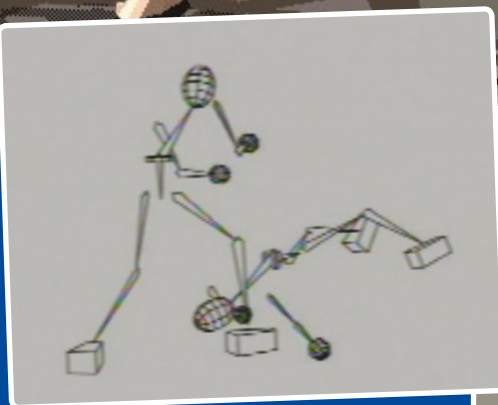
» Despite a comparatively sparse move list, signature techniques, like Akira's tetsuzankou body check, are present.

» If you want to see Lau drive someone's head into the floor from every conceivable angle, *Virtua Fighter* will always accommodate you.



ROUND 4

3' 38" 9



» Simple wireframe dummies were utilised in testing animations – this is the aftermath of a simple throw.

eight-way movement. Neither game troubled arcade operators with overflowing cashboxes, though.

So *Virtua Fighter* wasn't the first 3D fighting game, but it was the first one that was actually fun to play and the first to make a major impact. How major? Well, even if we ignore the very direct influence on 3D fighting games throughout history, the sequels and their enormous sales, and the lasting fan love for the game, consider this: it was the first arcade game to be included in the Smithsonian Institute's permanent collection of videogames. Of course, the story starts at AM2, the internal Sega team that produced many of the company's cutting-edge arcade hits.

It might seem surprising that AM2 tackled a 3D fighting game, given that many of its hits were racing games and shmups. However, studio head Yu Suzuki was a fan of the genre – in a 1994 *Edge* interview, he expressed admiration for *Fatal Fury 2* and *Samurai Shodown* (but not *Mortal Kombat II*, which he believed "would have been a bigger hit if it hadn't been as violent"). Speaking to us today, the veteran developer, who is currently working on *Shenmue III*, remembers the difficulty of working with the Model 1 arcade board: "From the outset, I wanted to put movement to the human form in 3D, however, because of the heavy processing that was involved, the first game that we could make was a driving game," he explains. The tech itself had taken three years to develop, and 3D game development was in its infancy. "The experience gained from *Virtua Racing* then led into *Virtua Fighter*."

To be more accurate, some of the experience went into *Virtua Fighter* – AM2 was split into two departments following the production of *Virtua Racing*. Ten staff members moved onto the production of *Virtua Fighter*, while a smaller contingent began work on *Daytona USA* on the new Model 2 hardware. This resulted in a batch of new hires at Sega, including Tetsuya Kaku, who was dropped straight into this high-profile project. "Working on *Virtua Fighter* meant working at the forefront of 3D technology, but when I first joined the team, the game's looks paled in comparison to the 2D fighting games that were big hits in Japan," explains the programmer, who is still at Sega. But that wasn't his biggest worry, as he confides: "What concerned me most was working with Yu Suzuki as he has a reputation for his strict attitude towards work."

Someone who had no such worries was Jeff Buchanan, a former member of the US Marine Corp and artist on *Virtua Fighter*. Having met his wife while stationed in Japan, he was looking for work in the country and sought to put his art education to good use. "At the time, I didn't know that the guy who was interviewing me was Yu Suzuki," he explains. "He was looking to build up some foreign talent in the AM2 team – they had already hired a French programmer [Francois Yves Bertrand], and were looking at me for my background in art." However, this wasn't what ended up clinching the job. "It was funny, he looked at my stuff and said 'Yeah, I like your art, but I'm really interested in the fact that you listed a bunch of martial arts, and I guess you had hand-to-hand combat training in the Marines. We'd really like you to work with the

Virtua Fighter

Developer Highlights

AFTER BURNER

SYSTEM: ARCADE

YEAR: 1987

VIRTUA RACING

SYSTEM: ARCADE

YEAR: 1992

VIRTUA COP (PICTURED)

SYSTEM: ARCADE

YEAR: 1994



► animation team on making realistic motions for this 3D fighting game we're making."

Jeff's experience with karate and aikido was important, as what Yu Suzuki was trying to achieve was a relatively realistic simulation – despite his fondness for contemporary 2D fighting games, he was never interested in including their more outlandish techniques, like fireballs and teleportation. "Even a real martial art such as Quan Fa hides many fascinating qualities," reasons Suzuki. "I knew there would be complications in the pursuit of realism here, and that it would be a challenge to express those hidden qualities in that era of low-caliber graphics, but as an actual martial art, Quan Fa held an undeniable romance for me. I felt I had no choice but to take it on."

Was the kind of practical knowledge that Jeff had really that important? "This was back before motion capture, so all motion was created by hand by our motion designers. We ended up with a lot of unrealistic motion created by designers who had no experience in martial arts," Suzuki explains. His solution was unorthodox, but effective – he required his staff to take martial arts classes themselves. "With some basic punching and kicking practice, we were able to go into production with a team of people who grasped the mechanics involved in that kind of motion." Jeff recalls the story with a chuckle. "I don't think most of the guys were all that big on it!"

Jeff had the opposite problem – he was basically new to computers, with his only prior experience being a brief bit of training in BASIC programming at the US Department Of Defense. "Once I got the job, I got a two-week crash course from one of the guys on the team on how to work with the models that they'd

“We sat down and watched martial arts videos, we got up and filmed ourselves doing the moves”

Jeff Buchanan

build and the control points in SoftImage to animate a character," he explains. "After about two weeks of messing around, in that second week I'd made an attack animation. They stuck it in the game and it worked, and Yu-san was all happy. So was I – it was like, 'Okay, I can do this!' From there, I was working with the team on combinations. We sat down and watched martial arts videos, we got up and filmed ourselves doing the moves."

As you might imagine, animating a human body is a complex process, especially when done by hand, and Virtua Fighter's character models were highly detailed by the standards of the day – characters were made from 1,500 – 2,300 polygons, and could even move their fingers individually.

"We had a basic ankle joint, a knee joint, the two hip points – both turning sideways and bending forward and back – another one halfway up the spine, two shoulder points, elbow points, the hands, plus a basic neck joint and another one for moving the head," Jeff recalls. It was a world away from animating Virtua Racing's car models.

Even creating a single punch or kick was quite a lot of work. "It was a little bit time consuming – some of the guys that were pretty good with the animation software could do it within just a few hours," Jeff recalls. "But the more complicated the move, especially if you had the body rotate in any sort of way, it took them much longer to deal with it. Of course, then there were issues of timing and refining things within the animation set for the programmers, so there was a lot of rework." One type of move proved to be more difficult than any other: throws. "Any of the combination motions, where a character would grab and spin and throw or roll with another character, those were the ones that gave us the hardest time," Jeff explains. It's no coincidence that these are amongst the most impressive and damaging moves, and also some of the trickiest to pull off.

Animation wasn't the only complication caused by the use of human characters. "As opposed to



► Kage can launch his opponent high into the air, leaving them helpless against a follow-up attack.

► Lau is arguably the best character in the original Virtua Fighter – fast, powerful and capable of easy Ring Outs.



Tale Of The Tape

Here are the key things you need to know about all of the combatants in the World Fighting Tournament

Lau Chan



This quiet man is devoted to achieving perfection in everything he pursues. Having achieved the distinction of winning the top prize at the world's most renowned competition for Chinese chefs, Lau is hoping to prove his mastery in the field of martial arts.

Fighting Style Koen-ken
Age 53
Birthplace China
Height 169cm
Weight 76kg
Blood Type B
Occupation Chinese chef
Hobby Chinese poetry

Wolf Hawkfield



This man of Native American descent lived a life in the woods as a lumberjack, until a pro wrestling promoter spotted him during a scouting trip. Wolf quickly achieved fame, going undefeated in the squared circle. He enters the tournament in hope of finding worthy competition.

Fighting Style Professional wrestling
Age 27
Birthplace Canada
Height 180cm
Weight 100kg
Blood Type O
Occupation Wrestler
Hobby Karaoke

Jeffrey McWild



This fisherman's greatest opponent is not a fellow fighter, but the eight-metre long Satan Shark. In their last encounter, the fearsome fish nearly killed Jeffrey and destroyed his boat. He enters the tournament seeking prize money to build a new boat.

Fighting Style Pancratium
Age 36
Birthplace Australia
Height 183cm
Weight 111kg
Blood Type A
Occupation Fisherman
Hobby Reggae music

Kage-Maru



This ninja has endured a harsh life. In his teenage years, his mother was kidnapped and disappeared without trace. Some years later, his village was destroyed and his father assassinated. Kage-Maru enters the tournament, seeking vengeance.

Fighting Style Hagakure-ryu Jujutsu
Age 22
Birthplace Japan
Height 173cm
Weight 64kg
Blood Type B
Occupation Ninja
Hobby Mahjong

Sarah Bryant



While investigating the circumstances surrounding her brother Jacky's racing crash, Sarah was captured and brainwashed. With her martial arts skills now supplemented with her training as an assassin, she is sent to the tournament with the goal of killing her brother.

Fighting Style Jeet Kune Do
Age 20
Birthplace USA
Height 168cm
Weight 54kg
Blood Type AB
Occupation College student
Hobby Sky diving

Pai Chan



This action movie star is known for her changeable moods, but one that stays fixed is her disdain for her father and former trainer, Lau. She fled from home at 16 after her mother's death, disgusted that Lau's only cared for martial arts. Pai enters the tournament hoping to beat him.

Fighting Style Ensei-ken
Age 18
Birthplace Hong Kong
Height 166cm
Weight 49kg
Blood Type O
Occupation Action star
Hobby Dancing

Jacky Bryant



Following a crash in the 1990 Indy 500, Jacky was injured and forced to undergo a rehab, part of which included martial arts training. His sister disappeared just as he discovered that his crash was no accident, and he enters the tournament seeking to solve these mysteries.

Fighting Style Jeet Kune Do
Age 23
Birthplace USA
Height 177cm
Weight 72kg
Blood Type A
Occupation Indy Car racer
Hobby Training

Akira Yuki



During WW2, Japanese infantry were trained in the Chinese martial art of bajiquan, better known in Japan as hakkyoku-ken, in order to improve their skills. The man who developed those techniques has passed them down to his son and heir Akira, who seeks to test his training.

Fighting Style Hakkyoku-ken
Age 25
Birthplace Japan
Height 176cm
Weight 76kg
Blood Type O
Occupation Kung-fu teacher
Hobby Kung-fu

Virtua Fighter

Left In The Dojo

Characters that never made it to the tournament and other secrets



A lot of concepts explored during the development of *Virtua Fighter* ended up going unused. This isn't unusual, yet *Virtua Fighter*'s unused content is well documented through prerelease images and footage, official media and leftover data in the arcade game. For a start, half of the main cast was renamed during development. Lau was known as both Lee and Tao at various stages, Kage-Maru was Yagyu, Akira's surname changed from Ryuzaki to Yuki, and Jeffery was formerly Willie Roberts.

Characters also underwent design revisions. The book *Virtua Fighter Maniax* shows Pai in a skimpy 'race girl' outfit, as well as Jeffery with a flat-top haircut and Jacky with headgear.

However, the unused fighters are the most interesting of all. Fans may be familiar with Siba, who appears on early *Virtua Fighter* cabinet artwork and in prerelease screenshots, and was later featured in *Fighters Megamix*. He was to be renamed Majido Abdul in the final game, and can be found in the arcade version. Also lurking in the data is a US Marine who bears a resemblance to *Tekken* character Prototype Jack. Amusingly he was named Jeff Buckman, a definite nod to Jeff Buchanan ("I was getting a kick out of it, I was laughing my butt off," he confirms). Lastly, three versions of an unnamed character exist in the arcade game. Little is known about him, but fans speculate that he may be described by an unassigned character biography, which describes the Japanese college student and karate practitioner Takeru Ryushoji.

cars, the human form has many joints which bogs down the processing, so high speed algorithms were needed. And besides that, the body-to-body collision processing was also complicated, creating a mountain of problems that piled up," recalls Suzuki. While Model 1's custom hardware was capable of spitting out polygons at an incredible rate, the 16MHz NEC V60 CPU at the heart of the system was somewhat dated, having been introduced in 1986. "One thing I recall is an issue related to CPU speed," confirms Tetsuya Kaku. "At that time, we had to design algorithms very carefully so as not to execute division with the floating-point arithmetic. If a bad algorithm was designed, it instantly influenced the code execution speed. My senior associate asked me to solve the issue, and in turn learn the various skills related with the program speed."

Despite the use of 3D graphics, *Virtua Fighter*'s action took place on a 2D plane like other fighting games of the time. The only point at which you were afforded control over lateral movement was when your character was knocked down – at this point, you could roll towards or away from the camera to avoid an incoming attack. This was a conscious choice on the part of the AM2 team. "The concept of 'Evasion' was considered since the first *Virtua Fighter*," notes Kaku. "It was partially implemented in *Virtua Fighter 2*, then officially implemented with the additional button in *Virtua Fighter 3*." According to Suzuki, the reason for



» Majido is the most well-known of the missing characters as he appeared in *Fighters Megamix* on the Saturn.



» Kage has got the trickiest moves in the game – this jumping two-footed kick starts from an innocuous forward roll.

not implementing it right away was because players struggled with the concept. "Everything we were trying to get across was a whole new challenge, so it was necessary to make the system as easily understandable as possible," he explains, before revealing that evasion wasn't the only feature from later games that was under consideration. "We could have added modified rings and undulation to the battlefield, however, as the learning curve for the player steepened, the repeat value lessened and players ended up quitting."

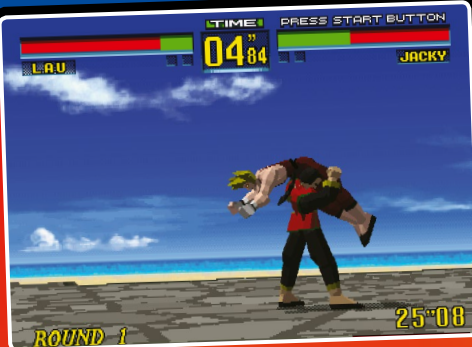
The only unorthodox aspect of *Virtua Fighter*'s rules was the introduction of the 'Ring Out' victory condition.

Each fight took place in a finite ring, and if you could force your opponent to leave it, you'd win the round – no matter how much health the opponent had remaining. "We trial tested several ways to decide victory, but when it came to trying out elements of Japanese sumo wrestling, I felt that it provided a nice sense of tension," explains Suzuki. "Upset victories could be had at the ring boundary, and I thought it was unique that play quality could vary by adjusting the ring size." Indeed, the tiny ring of Sudden Death bouts and the gigantic bonus stage ring change gameplay significantly, the former encouraging quick fights and the latter giving rise to more knockout victories.

Initial versions of the game used test models, prioritising movement over characters. "When developing the game, we first focused on adding as many moves and techniques as we could. Then we adjusted them accordingly, one by one," explains Kaku. "It's very sensitive work that takes hours, days, and

Conversion Cage Match

Virtua Fighter's various conversions graded and assessed



SATURN 1994

■ This early conversion plays well and retains much of the arcade look, and adds a nice remixed CD soundtrack. Sadly, it also suffers from terrible polygon drop-out problems – distant parts of the stage will often flicker in and out of view. It offers little over the original arcade game, too.



32X 1995

■ *Virtua Fighter*'s impressive animations and game design survived the conversion to 32X intact, even if the polygonal models had to be downgraded severely. This excellent version also includes some nice additional extras, including selectable camera angles and a tournament mode.

MAKING OF: VIRTUA FIGHTER



“The peculiarities of different fighting styles are quite distinct”

Yu Suzuki

weeks. I was overseeing the whole process, but other AM2 staff were in charge of the execution.” When the characters did come in, the goal was to ensure that they felt significantly different from one another. “We did a lot of tinkering to differentiate the fighting styles and designs of the characters to bring about their individuality. The peculiarities of different fighting styles are quite distinct,” Suzuki tells us. “Focusing first on Quan Fa (Chinese boxing), we then added other styles like pro wrestling.”

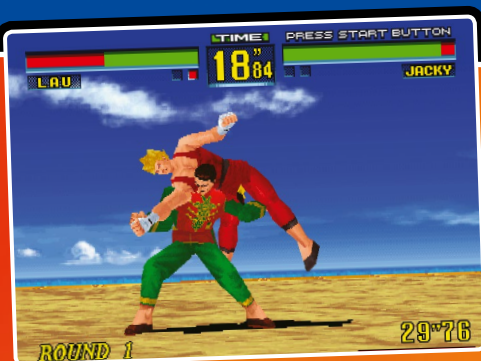
By the time of the game’s first public showing at the JAMMA show in August 1993, the game’s mechanics were in place alongside a roster of eight characters (“I thought eight different character choices would be about right. For one, I just like the number eight,” says Suzuki, in an interesting aside). These included the tricky ninja Kage, powerhouses Wolf and Jeffery, all-rounders Jacky and Sarah and Chinese martial artists Lau and Pai. But the series’ most recognisable character was nowhere to be seen – the eighth character was a Saudi Arabian fighter by the name of Siba. “Jacky was initially positioned as the flagship character as long as I

remember,” explains Kaku. “Then, Akira was added as we were to release this title in Japan first. I think it was a logical decision.” Akira wasn’t the only addition during this period, as other new models were created and added to the game, but he was the only one to survive. “They wanted to put more in, but as time was coming down, it was like, ‘Okay, we gotta get this wound up and get it out’”, Jeff explains of the late cuts.

Virtua Fighter was released in December 1993. Initial impressions were favourable, but not incredible. “I played this game for over an hour and couldn’t find any special moves to tempt me away from *Street Fighter II*” opined Rik Skews in a review for *Computer & Video Games*. “Sega should be praised for pushing back the boundaries of arcade games, as it did with the R-360, but that game was all look and no gameplay and this is sadly much the same,” he concluded, awarding the game 83%. But over time, opinions began to change. “When *Street Fighter II* appeared in arcades in early 1991, some games magazines dismissed



* A collaboration between Marvel and Sega resulted in a one-off comic in 1995 to celebrate the Saturn launch.



SATURN (REMIX) 1995

■ Responding to criticisms of the original Saturn release, Sega released *Virtua Fighter Remix* with fully-textured fighters and much more stable performance, but few other enhancements. Be wary of the Japanese Sega Net version – it won’t boot without a modem present in the Saturn’s expansion port.



PC 1996

■ The PC version is based on the Saturn’s *Virtua Fighter Remix*. It offers a high resolution, 640x480 mode and the choice to use either textured or untextured models and stages, though the untextured stages aren’t the same as arcade or Saturn *Virtua Fighter*. Modern machines will often run this game too fast.



PLAYSTATION 2 2003

■ *Virtua Fighter 10th Anniversary* is an odd hybrid. It features characters and moves from *Virtua Fighter 4 Evolution*, but takes visuals, music and rules from the original – so there are no throw escapes or sidestepping. US fans got it as a bonus in *VF4E*, but it was an actual release in Japan and a non-retail promo in Europe.

Virtua Fighter

Q&A: Michael Latham

The former Sega Of America producer explains how the 32X conversion was made



During early reporting on the 32X, the press seemed split on whether or not Virtua Fighter would actually be coming to the system. Was there ever any concern over the hardware being able to handle the game?

I think that split came from the fact that the core Virtua Fighter team had little interest in doing 32X as a platform. I think they viewed it as a platform that mattered more for the US/Europe than Japan, which wasn't unfair given different market conditions. So the project was given to a B team within Sega which would use the core code from the arcade team. They were instructed at this point to do a proof of concept, and once the Virtua Fighter team saw it came close enough, and under pressure from the US and Europe, they agreed to let the title move forward.

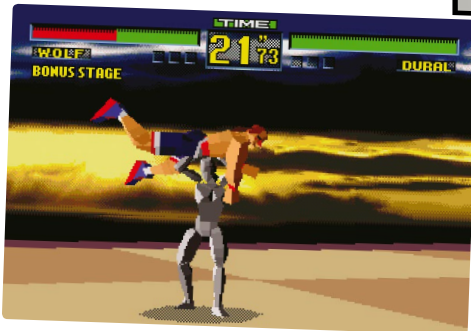
Which aspects of the original game were prioritised during the conversion process?

Once the project passed the proof of concept [stage] the core Virtua Fighter team focused on other stuff. Joe Miller realised this and dropped by my office. He said we need some wins on the 32X, and Virtua Fighter was a key title. He filled me in on the fact we had a young independent team doing the port in Japan and he wanted someone who would push them to create more than just a port. He wanted to prove that the 32X could deliver more than had been seen, while we all worked on US originals for it.

So my first focus was direct the team to ensure we nailed the gameplay first and worry about arcade reproduction nearly last. I had my best guys to help – Eric Quakenbush, Erik Wahlberg, and Bill Person on the US side. Going chip to chip we would lose, but we could make the game fun, responsive, and give more features for a console because the Japan team was open to all ideas. They worked their butts off like no other team I had worked with. We shared a common love of fighting games and they didn't have the anti-EC view the VF core had.

Was there a push to offer 32X players something over the existing Saturn version?

Yes that push came from myself and the rest of the US team. We had learned a lot



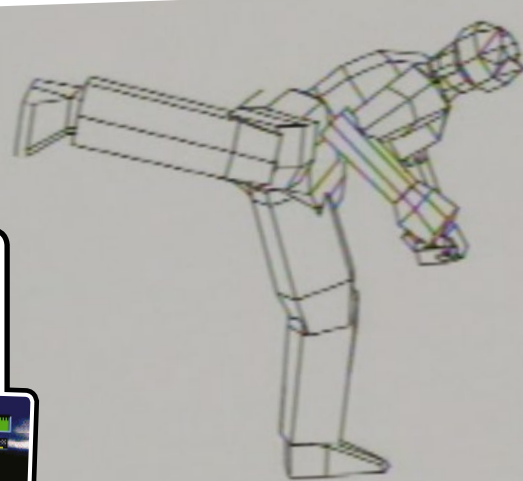
from Eternal Champions. We understood home console ports had limited long term replayability without adding competitive features. We also realised the arcade control of the camera was too limited and pushed to allow dynamic camera angles, and cheats allowed you to modify the physics of the game. So not only would the consumer get to play with this stuff it became a critical tool for our team to play balance and optimise the game on the 32X.

The 32X version of Virtua Fighter was well received, but arrived at a time when the hardware was struggling. Was the game seen internally as something that could help boost 32X sales, or had that ship already sailed?

It was viewed as critical and for sure helped give the 32X a much needed bump, but the other planned titles were slowed or cancelled for the platform and the rest is history. I wish we could have made it a launch title, it would have likely allowed me and other Omega members to ship the US titles as the second wave. Losing the likes of Virtua Hamster is a bummer to this day.

I have mentioned that Sega Of Japan was not happy with the US and Europe focus on Eternal Champions, especially the Virtua Fighter core team. Well here's something I haven't fully explained before. When we got ready to ship the product, the Virtua Fighter core team was shown the final version. They were beyond angry. They didn't like all the additions and the game balance our side created. So much so I was called into a meeting with Joe Miller and Tom Kalinske where Sega Of Japan said we could not ship this version, we would have to wait for a new version which would strip everything out the US side had the Japan team do. Joe Miller and Tom Kalinske were having none of it and got Sega Of Japan upper management to relent and ship our gold master as is.

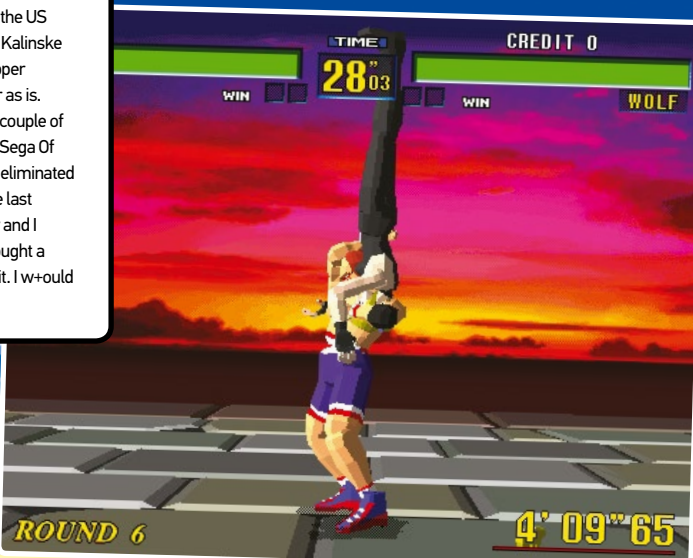
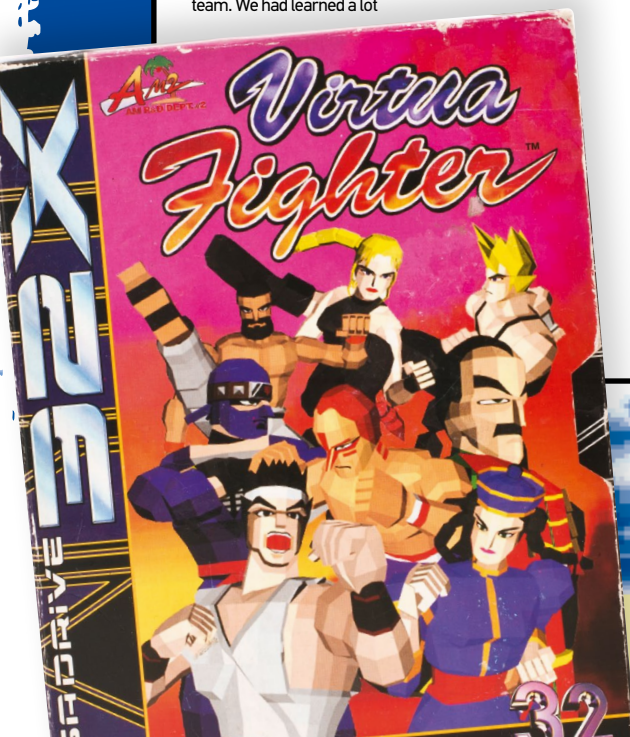
There was a deep price to pay for that day. A couple of months later Eternal Champions 3 was killed by Sega Of Japan and the property was pretty much all but eliminated from Sega history. Now you know what was the last straw. I knew this risk but I bleed blue even now and I wasn't about to let down our customers who bought a 32X or any title that shipped with our names on it. I would make the same choice today.



» Here's an early wireframe character model, demonstrating a kick animation.

► it," remarked Edge in a preview of the Saturn conversion. "Street Fighter II's playability took time to surface, but once its qualities became obvious, the game snowballed into a craze of gargantuan proportions. And many would say the same thing is now happening with Virtua Fighter," the article continued. "In recent months, Japanese coin-op fans have gone crazy over the game, and what was initially snubbed by many as being clumsy and shallow is showing that it also contains its fair share of hidden depth." Kaku remembers the emerging craze well. "I used to play Virtua Fighter in the arcade almost every day. I played with all of the characters, but my favourite character was Wolf," says the programmer. "I won 30 games straight against ordinary players!"

Indeed, as players discovered a wealth of special moves and mastered the then-unusual act of continuing to attack an opponent that had been knocked into the air, it became clear Virtua Fighter did have hidden depth. By the time a home conversion for the Saturn arrived in November 1994, critics had been won over. Edge's 9/10 review said that, "Although the characters look good in static screenshots, it's the animation that brings them to life," later noting them to be, "A well-balanced bunch, offering a choice of power, speed or agility." Other magazines were similarly impressed. "With combos to rival Street Fighter, VF adds to this with cheeky moves – you can juggle an opponent with a flurry of punches," noted Steve Merrett in a 96% review in Mean Machines Sega. Rad Automatic declared it to be "obviously the work of some strange supernatural force" in CVG's 94% review. Ultimate Future Games declared it to be "The game that killed the 16-bit machines" in its own 96% review.





“Virtua Fighter had few expressive polygons”

Yu Suzuki

The game did well in the West, but was hampered twice over. In the arcades, it wasn't as widespread as it could have been as it was an astronomical expense for all but the most wealthy of arcade operators – magazines of the time quoted deluxe Super Megalo sit-down cabinets selling for roughly £14,000. In the home, the high price of the Saturn hurt it, as did the appearance of the graphically impressive *Battle Arena Toshinden* as a PlayStation rival. But in Japan, *Virtua Fighter* wasn't just a game – it was a phenomenon. Top players like Shinjuku Jacky and Ikebukuro Sarah became notorious for their skilled tournament performances, and were tapped up to supervise detailed guide books on how to improve at the game. Then there were the tie-in products – the gameplay videos, the manga adaptations, the CD soundtrack, and later a full animated TV series. When *Famitsu* readers were asked to vote on their top 100 games in 2006, *Virtua Fighter* placed 39th. This put it ahead of many favourites, including *Sonic*, *Metal Gear Solid*, *Pokémon*, *Super Mario World* and *Tetris*. In fact, the only fighting games to make that list were *Street Fighter* and *Virtua Fighter* games.

Virtua Fighter's popularity was so great that as well as spawning a variety of direct sequels and spinoffs, Suzuki

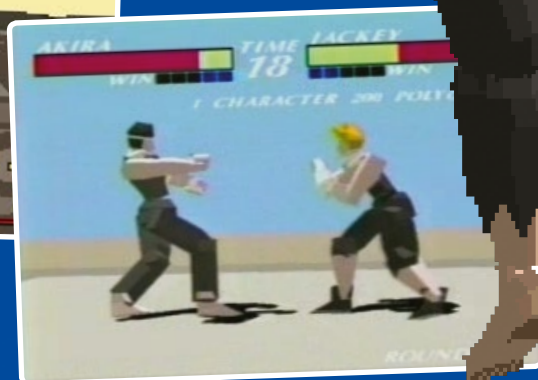
even considered using it as a launching point for his most ambitious project, a game then known as *Virtua Fighter RPG* starring Akira. “It was our first experience with a large-scale RPG, so rather than starting from scratch we thought it would be safer to build upon the reputation and elements of *Virtua Fighter*,” he explains. “As we got further along in development, we judged that the content could be incorporated even as its own brand, so we separated the title from *Virtua Fighter* to make it into *Shenmue*. At that point, the main character was changed from *Virtua Fighter*'s Akira to Ryo.”

The legacy of *Virtua Fighter* extends far beyond its own direct lineage, though. Key staff member Seichi Ishii left Sega after the completion of *Virtua Fighter*, and ended up becoming director and main designer for Namco's *Tekken*, which became the primary competition to Sega's 3D fighting series. He later founded Dream Factory, creating further 3D fighters including the *Tobal* games. *Dead Or Alive* was also strongly influenced by the early *Virtua Fighter* games, and acknowledged this directly with crossover characters Akira, Pai, Sarah and Jacky in the *Dead Or Alive 5* series. Even those games that didn't have the benefit of former *Virtua Fighter* staff owe the game a debt – the game's odd jumps, juggle combos, ring out victories and lack of projectiles were idiosyncracies in 1993, but many 3D fighting games in the years to come would follow the leader by including them.

Looking back at *Virtua Fighter*, it's clear that the staff appreciate the importance of what they had created, while being unafraid to note its shortcomings. “*Virtua Fighter* had few expressive polygons and was hamstrung with impotent machine power, causing low

» Pai offers a series of moves that intercept the opponent's punches and kicks, which are perfect to use against predictable players.

» Before producing the Saturn conversion, experiments in polygon reduction took place on Silicon Graphics machines.



character aspect and angular features,” says Suzuki. “It was quite a trial starting out with characters that looked like they were made from cardboard boxes. Bringing any kind of beauty to the female characters was particularly taxing, seen in how stiff Pai turned out!” But everyone needs to walk before they can run, and *Virtua Fighter* was an important first step. “By the time we got to *Virtua Fighter 2* we were able to use textures which helped bring everything together a bit better. It is quite something to consider just how unimaginable it was to get to characters as realistic as they are in the newest *Virtua Fighter* when they started out like that in the original *Virtua Fighter*,” he adds.

For Kaku, the main issue was bugs. “A few moves and techniques can be performed using unexpected timing and button input. In a word... bugs. However, these bugs still maintain the game's balancing, which is very unusual. These little touches make me believe *Virtua Fighter* stands on its many unusual miracles,” he notes, before explaining why he remains so fond of the project. “It was an exciting experience to work with such cutting-edge technology as a programmer. I could learn the inner workings of real-time CG before anyone else, which was a huge boon for my career after the project. Releasing the world's first 3D CG fighting game is my most cherished achievement.”

Ah yes, the first 3D fighting game. *Virtua Fighter* might not actually hold that title, but everything beforehand is the domain of pedants and trivia buffs – *Virtua Fighter* is the first one that *mattered*, and that's why it's such an easy mistake to make. ★

Special thanks to Yu Suzuki, Franck Sebastian and Danny Russell for making this article possible.





THE LEGEND OF ZELDA A LINK TO THE PAST

Refreshing a series for a new generation is tough, especially when it's a Zelda title. Nick Thorpe speaks to Takashi Tezuka and Kensuke Tanabe about the hard work that went into this action-RPG classic...

When you look back at the history of the series, *The Legend Of Zelda* occupies a funny space in Nintendo's planning processes.

If a *Zelda* game arrives in time for a console launch, it's because the game was heavily delayed on the previous generation of hardware. Yet *Zelda* is never overlooked when a new Nintendo console is being planned – in fact, it's often one of the very first things considered for a new machine. Our first look at *The Legend Of Zelda: The Wind Waker* came before the GameCube had hit the shelves, but the game launched over a year into the life of the machine. A demo of what would eventually become *The Legend Of Zelda: The Ocarina Of Time* was shown to attendees of Nintendo's Shoshinkai

1995 expo, but the game didn't materialise until 1998. But the game that started this tradition was *The Legend Of Zelda: A Link To The Past*, the game that marked Link's move off of 8-bit platforms.

In planning the launch of the 16-bit SNES platform, Nintendo identified two basic software needs: new properties that could demonstrate the power of the new hardware, and more of what had made the NES successful. For the former category, Nintendo chose racing and flight games that would be impossible to achieve on rival consoles, and delivered a one-two punch of *F-Zero* and *Pilotwings* in November and December 1990. For the latter, Nintendo chose to immediately develop follow-ups to its most popular NES properties – the *Super Mario Bros.* and *The Legend Of Zelda* series.



HYRULE'S HEROES

The A Link To The Past developers we spoke to



TAKASHI TEZUKA
Director



KENSUKE TANABE
Script Writer

However, creating a new *Zelda* was a bit more difficult than creating another *Mario* game – *Mario* games were all very similar, but *The Legend Of Zelda* and *Zelda II: Link's Adventure* were very different games. This left the Nintendo EAD team with some big decisions to make regarding its approach to the new game. "In *Zelda II: The Adventure Of Link*, we wanted to include sword combat with a variety of different moves into the gameplay, and so decided the project would use a side-scrolling view that made use of our experience from *Super Mario* games," explains Takashi Tezuka, a veteran Nintendo developer who served as director for both *The Legend Of Zelda* and *The Legend Of Zelda: A Link To The Past*. "We made two *Zelda* games for the NES, both making the most of that hardware. But then with the next *Zelda* for the SNES, we were able to add even more new things to the gameplay."

The final decision on which structure to use was driven by the concept of the game, according to Tezuka. "When we were starting the project, we experimented to see if it was possible to include a multi-world structure into the game. Our plan was that events in

the hub world would have an effect on the other, overlapping worlds," he explains. "In the end, we decided it would be best for us, the developers, as well as for players to have this as two worlds; one light, one dark. We felt the best way to represent this overlap of light and dark, and to represent the changes between them, was to use the same slanted top-down view used in the original *The Legend Of Zelda* game."

It's rare for a company to discard the major changes made to a sequel, but it would prove to be a wise decision. Quite apart from the fact that *Zelda II* has become known as one of the weaker games in the series as time has passed, there was still a lot that Nintendo could change and improve in going back to the old top-down format. Even very basic things were overhauled, such as the way Link moved around the environment – for the first time, he was able to move diagonally as well as in the four cardinal directions. Rather than using a simple thrust, Link would actually swing his sword in a more realistic arc.

According to a 1992 Famitsu interview with Shigeru Miyamoto, this combination of new features actually gave way to another new feature. With the addition of

LINK'S ARSENAL

A hero can't get the job done without the right tools...



BOW & ARROW

■ A good ranged weapon, although you have a limited supply of arrows.



BOOMERANG

■ This doesn't just hurt enemies, it retrieves far-off items too.



HOOKSHOT

■ This item can pull Link across dangerous gaps, or grab baddies.



BOMB

■ Does what it says on the tin – place it and run away!



ETHER MEDALLION

■ An enormous blast of lightning fries flying enemies and stuns the rest.



QUAKE MEDALLION

■ A mighty tremor reduces grounded enemies to either nothing or slime.



LAMP

■ Useful for lighting up the game's many dark rooms by igniting torches.



MAGIC HAMMER

■ This versatile tool and weapon is useful against frozen enemies.



CANE OF SOMARIA

■ This is used to instantly create blocks – good for weights and shielding.



CANE OF BYRNA

■ This awesome item shields Link and hurts enemies in the process!



MAGIC CAPE

■ This fashionable item makes Link both invisible and invincible.



MAGIC MIRROR

■ An important item, as it's Link's path between the Light and Dark Worlds

LINK SHRINKS

The only port of Link's 16-bit adventure received some major upgrades...



The prospect of SNES-quality games on the Game Boy Advance was one that intrigued gamers around the world, and Nintendo set about making sure that a number of them would be available for dedicated fans, with

The Legend Of Zelda: A Link To The Past being one of the earlier examples. The game ran at the slightly lower screen resolution of 240x160 (as opposed to 256x224), but received slightly more accurate translation and some minor bug fixes.

However, the game also received a major new mode in the form of the co-operative game *Four Swords*, which allowed up to four players to quest together as various coloured Links using the GBA's Link Cable. If you finished that quest, it was then possible to play through a new single-player dungeon as a reward, facing numerous stronger versions of the Dark World bosses before coming face to face with a surprising final enemy.

Not only did the GBA game sell an impressive 1.8 million units, but *Four Swords* left its own legacy, spawning the dedicated multiplayer GameCube sequel *The Legend Of Zelda: Four Swords Adventures* and the 3DS game *The Legend Of Zelda: Tri-Force Heroes*. *Four Swords* was also rereleased as a limited anniversary edition downloadable game for the Nintendo DSi and 3DS handhelds.



▶ diagonal movement, the Nintendo EAD team had made the logical assumption that Link should be able to attack diagonally, too. However, in practice it actually made the controls feel somewhat worse, and Link was once again saddled with the ability to move in eight directions but face only four. Undeterred, the team found a way to add a multi-directional attack in the form of a spin attack, activated by holding the sword button down for a couple of seconds. This elegant solution would go on to feature in many subsequent *Zelda* games and become a staple of the series.

Other changes to the use of weaponry and items were considered too, according to Tezuka. "At the start of development, we wanted players to be able to freely choose which weapons to hold, not just the sword and shield," explains the game director. "We also thought about having these weapons combine, say for example, having the Bow & Arrows set to the A Button and a Bomb to B Button so that when you use them together (i.e. press both the buttons), Link would shoot an arrow with a bomb attached." This would have revolutionised *Zelda*'s combat system, but ultimately didn't come to pass – however, it might sound familiar to fans of the series. "In the end we didn't use this in *A Link To The Past*, as Shigeru Miyamoto requested that Link always have the sword equipped," Tezuka recalls. "We were able to implement this system in the next title, *Link's Awakening*, though."

Working with the SNES also opened up a world of new possibilities for the Nintendo development team. "The new hardware allowed us to do things we hadn't been able to until that point. I'd only been drawing four-colour pixel images up until then, so even simply just increasing the number of colours available to use to 16 or 256 colours, as well as being able to use high-quality sounds, was really exciting for me," explains Tezuka. "Figuring out how best to effectively reflect the features of the hardware into a game is always a challenge that Nintendo's game designers face, and not limited to this game," notes Kensuke Tanabe, the scriptwriter for *A Link To The Past*. "For me, who'd studied visuals at university, being able to use two 'animation cells' and having the possibility to scroll them separately was a huge deal."

The technique that Tanabe refers to above is that of using multiple background layers. On the NES, it was only possible to draw a single layer of background graphics and a single layer of sprite graphics. With the SNES, developers had the luxury of multiple background layers. For example, in *A Link To The Past*, one layer is used to display the stage layout and a second layer is reserved for special effects. A third layer is used to display the HUD, which never moves. "Using it allowed us to create the raining scene at the very start of the adventure, as well as show sunlight filtering down through the leaves in the forest," Tanabe recalls of the special effects layer. "It's the effect of the sunlight in the forest that I'm particularly fond of. I'm also really pleased that we were able to display which floor a player is on by using two 'animation cells'. This was actually a suggestion from the engineering team."



» The memorable rainy intro to *A Link To The Past* was only possible with the power of the SNES.

- 
MAGIC POWDER
 ■ This can transform enemies into weak or even helpful creatures!
- 
FIRE ROD
 ■ Use this to send a burning blast in the direction of your foes.
- 
ICE ROD
 ■ Freeze the enemy with this vital piece of magical weaponry.
- 
BOMBOS MEDALLION
 ■ Hit everything on screen with fire magic, at great magical cost.
- 
FLUTE
 ■ This ocarina-shaped object can summon a bird for fast travel.
- 
BUG-CATCHING NET
 ■ If you want to put a bee or fairy in a bottle, you'll need this.
- 
BOOK OF MUDORA
 ■ This allows Link to read Ancient Hylian, often used in magical places.
- 
BOTTLE
 ■ These handy containers can hold potions, fairies and even bees.
- 
PEGASUS SHOES
 ■ Footwear that allows Link to perform a speedy dash attack.
- 
POWER GLOVE
 ■ No dodgy NES peripherals here – this lets Link lift some heavy objects.
- 
FLIPPERS
 ■ Worth the 500 Rupees the Zora charges, as you'll be able to swim!
- 
MOON PEARL
 ■ Without it, Link would lose his human form in the Dark World.

“Shigeru Miyamoto requested that Link always have the sword equipped”

Takashi Tezuka

Despite the new possibilities, technical issues were rare. “Our game designers had a pretty good idea of what could be done on the hardware back then, so I don’t believe we had any unexpected implementations,” Tezuka confirms, though he does note one important exception. “Having said that, though, we had a long battle with the memory size, and I remember very clearly that the engineering team worked extremely hard to optimise it.”

Prior to *The Legend Of Zelda: A Link To The Past*, all of Nintendo’s first-party SNES games had used a minimal ROM size of just four megabits. Not only did the new *Zelda* require eight megabits of storage, it was pushing that limit. A simple graphical compression routine was brought over from *Super Mario World* to combat this, which saved space by limiting many graphical tiles to eight colours, rather than the standard 16 that the SNES is capable of. With data duplication cut to an absolute minimum, the game was able to fit into the ROM allocated. Even then, translating the game from Japanese once again challenged this limit. In his 1992 *Famitsu* interview, Miyamoto explained that the original plan was to use a higher capacity cartridge

for the translated game, and use what extra space remained afterwards to make some improvements to the Western releases. However, further compression rendered increased capacity unnecessary.

The 16-bit versions of both *Mario* and *Zelda* had entered development at the same time, but while *Mario* stuck to its planned trajectory and made it out for the November 1990 launch of the console, *Zelda*’s planned arrival in March was going to be impossible. In fact, by the time that eager gamers in Japan were trying out the new Super Famicom for the first time, Nintendo EAD was only just confident of the game system it had settled upon! The next step was to add the additional staff to complete the work by adding in enemies, a scenario and more. In an interview for the official *Super Mario World* guide book in Japan, Miyamoto estimated that the game would be completed by Children’s Day (May 5th) in 1991 in anticipation of a summer release, but this turned out to be an underestimation. According to Miyamoto’s 1992 *Famitsu* interview, implementing these final features took about eight months, pushing the game back further from summer to winter.

If there’s any reason that *A Link To The Past* took longer than expected, it might well be because of how much attention was paid to the plot of the game. Right from the start, it was clear that it would be told in more detail and with greater dramatic flair than the NES *Zelda* games were capable of, and that item acquisition would be closely tied to story progression. A clear example of this comes in the game’s opening sequence – by contrast to the earlier games, the SNES game offered a far more structured introduction to Link’s quest. “In *A Link To The Past*, the game starts with a dark, rainy scene, with Link being just a regular village boy who, in the same situation as the player,



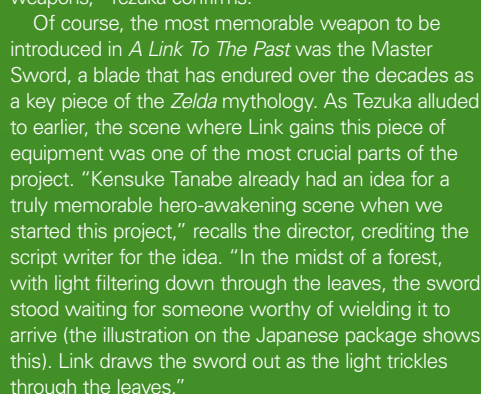
» The moment when Link gains the Master Sword is a pivotal and iconic scene in the game.

doesn’t really know what’s going on, but just follows Princess Zelda’s voice and works to save her. However, in doing this he somehow ends up becoming an outlaw. We wanted players to start feeling excited and wonder what will happen next,” explains Tezuka. It’s a dramatic opening, but finding and rescuing the princess so early on definitely surprised some players, who felt that the game was going to end quite suddenly. “We didn’t intend to make players feel like the game was going to end there,” admits Tezuka, who always saw Link’s ascension to heroism in a rather different way.

The previous games had just dropped the player into the world and allowed them to get on with it, but this would not be an approach that would be repeated in *A Link To The Past*. “We didn’t have Link start out as a sword-wielding hero right from the start, because we had already decided at the beginning of the project that we wanted him to awaken as a hero when he pulls out the Master Sword,” explains Tezuka. “We did

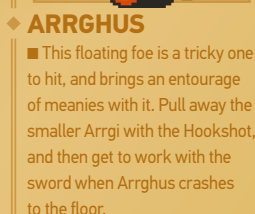
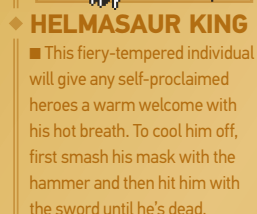
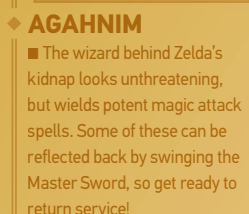
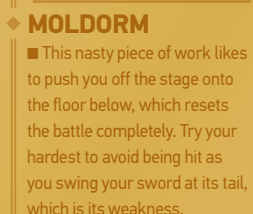
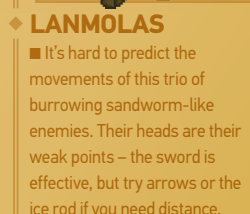
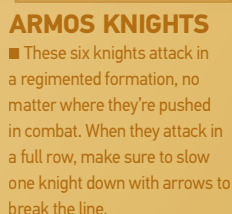


» The dastardly wizard Agahnim has got Zelda, and now he’s zapping her into the Dark World!



The Legend of Zelda: A Link To The Past was released on November 21st 1991 in Japan, with North American and European releases following on April 13th 1992 and September 24th 1992 respectively. No matter where you were in the world, the game was regarded

While many foes stand in Link's way, these bosses are easily the deadliest dozen...



“Our main aim was to show the birth of a hero in a scene fitting of a Zelda [game]”

Takashi Tezuka

as an instant classic. Critical praise was unanimous – *Computer & Video Games* awarded the game 89%, noting that “the elements of strategy and adventure are added treats rather than annoying extras.” A review in *Mean Machines* scored the game 95% and declared it “simply the greatest exploration/adventure game available for a console,” while *Super Play Gold*’s 93% review noted that “you’re unlikely to want to switch the game off”. The game sold a massive 4.61 million copies on the SNES, and ultimately spawned both a successful rerelease on the Game Boy Advance as well as a successor for the Nintendo 3DS, *The Legend Of Zelda: A Link Between Worlds*.

Despite the excellent quality of *The Legend Of Zelda: A Link To The Past*, it would ultimately prove to be the end of the line for the *Zelda* series as players had known it, as the series was about to undergo a

radical change. The next mainline sequel was *The Legend Of Zelda: The Ocarina Of Time*, which transformed the series with open 3D spaces and more. While smaller 2D *Zelda* games would continue to appear on the Game Boy platforms, including the excellent *Link’s Awakening*, *Oracle Of Ages And Oracle Of Seasons* and *The Minish Cap*, there was never another 2D *Zelda* game to get the big budget treatment that *A Link To The Past* received.

But that’s not to say that *A Link To The Past* hasn’t had a lasting influence, not by a long shot. Elements from the game including the spin attack, the Hookshot and the Master Sword have become series regulars, and that dual-world concept has been revisited very frequently – just look at young Link and adult Link in *Ocarina Of Time*, or human Link and wolf Link in *Twilight Princess*. The third *Zelda* game is as tightly woven into the legacy of the series as any of the other major entries.

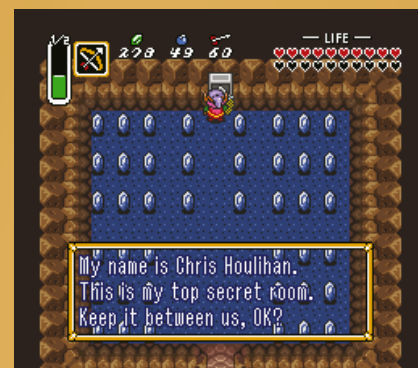
Ultimately, *The Legend Of Zelda: A Link To The Past* is one of those rare games that not only achieved critical and commercial success, but has stood the test of time and continues to attract new fans today. How does the team feel about this sustained success? “We’re truly thankful, and consider it a great privilege,” Tezuka says, but he’s careful not to rest on his laurels. “At the same time, it also drives us to create new games that will surpass this acclaim.” ★

I AM ERROR...

The story behind one of gaming’s most infamous secrets...

Back in the early Nineties, we can’t imagine many American kids turning down the chance to get their name featured in a NES game. With that in mind, a contest ran in *Nintendo Power* during 1990, allowing the winner to win just that prize. The eventual winner was a chap named Chris Houlihan, whose name was eventually incorporated into not a NES game, but a SNES game – *The Legend Of Zelda: A Link To The Past*.

Of course, there was a catch. There’s every chance that you might have missed that young Nintendo fan’s crowning moment of glory, as Chris Houlihan’s secret room only appears as an error handling measure – if the game can’t determine Link’s next destination, he ends up in this Rupee-filled room and exits to his own house. Plus, if you played the game in any language other than English, Chris Houlihan’s name is nowhere to be seen!



» Soldiers take pig form in the Dark World, and you won’t see any other humans.



» Climbing the mountain to Hera Tower is dangerous, thanks to a constant rain of rocks.



MOTHULA

■ Not only does Mothula move erratically around the stage, it fights you in a room with moving floors. If you’re struggling to get close enough for the sword to hit, blast it from afar with the Fire Rod.



BLIND THE THIEF

■ This photosensitive thief disguises himself as a maiden before revealing his true formidable form. There’s no clever strategy here – hit him with the sword and avoid his floating heads and projectiles.



KHOLDSTARE

■ There’s a frosty atmosphere in this boss fight, and Link will slide around easily. Melt its icy shield with a fire attack (the Bombos Medallion works well), before finishing it with the sword or Fire Rod.



VITREOUS

■ The slime that this gaggle of eyeballs lives in is both disgusting and deadly to touch! Slice down each smaller eyeball as it launches itself at you, before taking out the biggest one from afar with the bow.



TRINEXX

■ Three heads are deadlier than one, as far as this boss is concerned. Stun the red head with the Ice Rod and the blue head with the Fire Rod before attacking, then finish Trinexx off by hitting the glowing orb.



GANON

■ The biggest of big bads, Ganon is the swine behind this whole evil scheme. To finish him off, make sure the room is brightly lit, hit him with the sword to stun him and shoot him with a silver arrow.



THE WORLD

Here's a look at the key locations Link will visit as he becomes a hero in the Light World...



LOST WOODS

■ This is where you'll find the Master Sword, truly awakening Link as a hero. But you'll need three pendants to claim it...



HYRULE CASTLE

■ This is where Princess Zelda is being held at the beginning of the game, and where you'll later fight Agahnim. The boomerang can be found here, too.



KAKARIKO VILLAGE

■ Most of the residents of the town here are terrified of Link, and some will summon guards to attack him. You can grab a bug-catching net here.



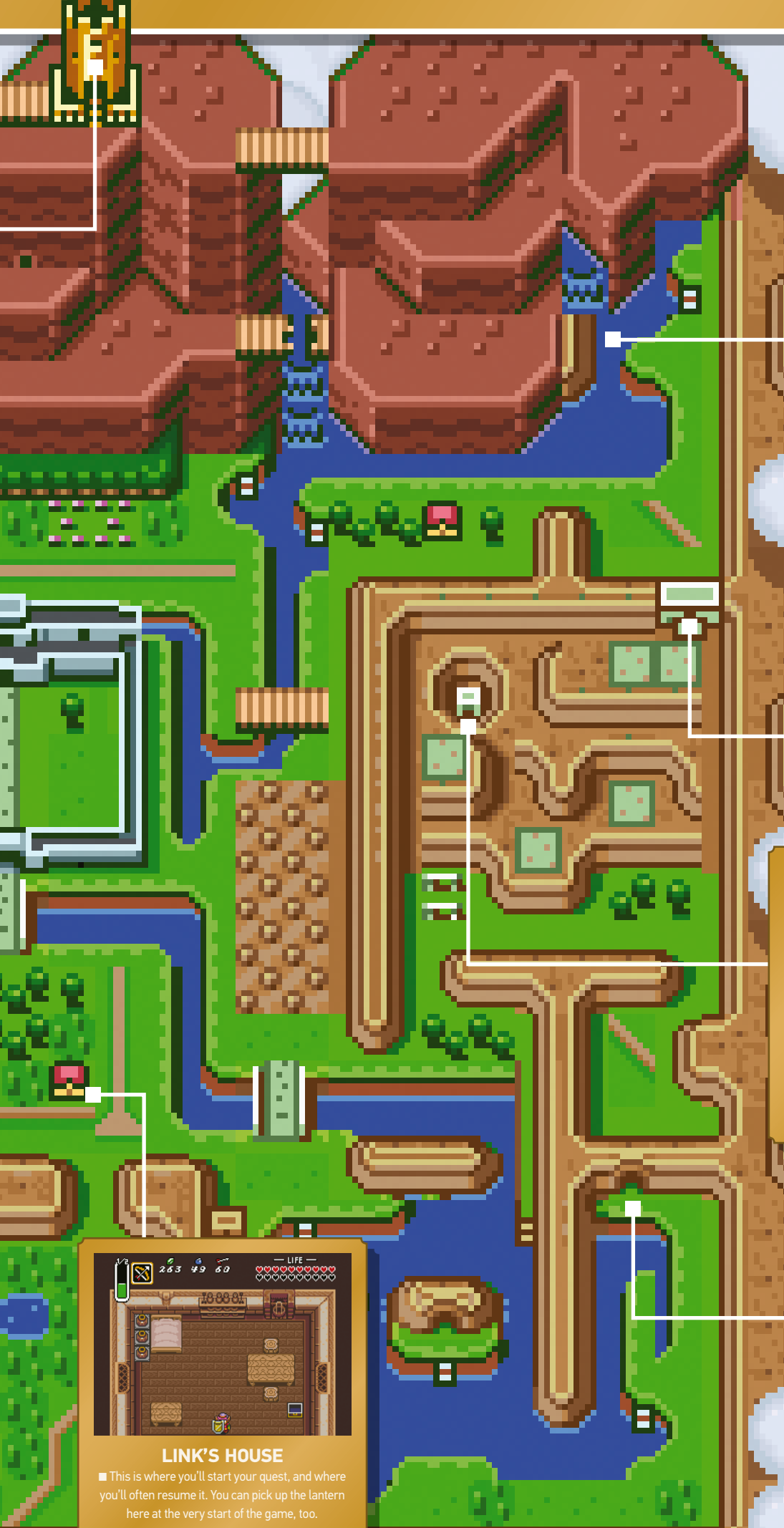
DESERT PALACE

■ The power glove here is key to lifting heavy rocks, which you'll need to do to claim the second pendant.



HERA TOWER

■ Atop the mountain, this fortress guards the final pendant you'll need to obtain the Master Sword. You'll need the Moon Pearl located here, too.



ZORA'S DOMAIN

■ Make sure to bring some cash with you here, as you'll be able to pick up some useful flippers that allow Link to swim.



EASTERN PALACE

■ You can grab the all-important bow here, as well as collecting your first pendant. You'll have to fight for it, though!



SAGE'S HIDEOUT

■ The man who'll set Link on his path to heroism is taking refuge from the forces of evil here, and is holding onto the Pegasus Boots for you.



LAKE HYLIA SECRET CAVE

■ This remote cave holds a particularly useful item, the Ice Rod – it's worth the big detour to claim it as soon as possible.



LINK'S HOUSE

■ This is where you'll start your quest, and where you'll often resume it. You can pick up the lantern here at the very start of the game, too.



The Rise Of The **AMIGA**





As central as the Amiga 500 is to computing in the UK, it almost never existed. Now, on its 30th anniversary, Kim Justice details how the A500 survived company shake-ups and fierce competition to become the defining computer of the late Eighties

Commodore had a bad year in 1985. The American company from West Chester, Pennsylvania lost \$113 million over the course of 12 months, and a lot of its staff had jumped ship to its fierce rival, Atari – now owned by Commodore’s former CEO Jack Tramiel, the man who Commodore chairman Irving Gould had fired in 1984. His replacement, an ex-steel executive by the name of Marshall Smith, had paid the price for Commodore’s failings. Previously the top dog in the computer market, thanks to the C64, Commodore was now on the ropes – and its latest computer, the Amiga 1000, had floundered and sold badly. It was tough to see just what the future held for the company, and anything from a future producing IBM PC-compatibles to bankruptcy was predicted.

It is quite something to think that the Amiga’s story could have ended here, before it even reached the shores where it would truly make its name. Indeed, the Amiga was so popular in the UK that it’s hard not to think of it as a European computer, considering how much of the best games and best software for it ▶

AMIGA 500

Killer games



APIDYA

1992

■ A very colourful, *Gradius*-inspired horizontal shooter where you control a deadly bee and blast the hell out of other insectoid-based ships. *Apidya* is notable for coming with a killer soundtrack, courtesy of composer Chris Huelsbeck.

BATTLE SQUADRON

1989

■ This vertical shoot-'em-up received a very poor port to the Mega Drive, but was one of the best on the Amiga – a classically difficult old school space shooter with plenty of travelling through fortresses, cityscapes and the innards of aliens.



BILL'S TOMATO GAME

1992

■ Essential Rube-Goldberg-esque puzzle game where you have a brief time limit to try and position platforms, trampolines and lord knows what else in order to get a tomato from A to B. The Bill in question is Bill Pullan, designer of the game.

BLOOD MONEY

1989

■ One of DMA's first successful titles, the folks who gave us *Lemmings* also gave us this tough shooter, where enemies fly at you from all sides. It comes with an iconic spoken intro, classic soundtrack and DMA's typically zany sense of humour.



HUNTER

1991

■ This game was pulling off an open world in 3D long before anyone else, allowing you access to multiple types of vehicle and the ability to interact with people and bribe them for information. It's considered a precursor to what *GTA* would eventually become.

Making waves

We chat with ocean's Gary Bracey about the Amiga



What did the Amiga 500 offer over earlier Amiga models?

I think price was a major feature, and the form factor was very attractive, too, as it was an all-in-one, with disk drive, etc..

What made Ocean focus on the Amiga 500?

When Commodore shared their plans with us, we believed it would be a very successful home computer and so we offered our support in terms of making compatible games for it.

Where you concerned about given *Batman* away from free in the *Batman Pack*?

Not at all as they paid us per-unit! Obviously we didn't receive as much for each sale as retail, but we knew that the quantity would be significant.

Did Amiga games require more development?

No, not that I recall.

Why do you think that so many Amiga Ocean arcade conversions were so good?

Due to the processing and graphical power, we were able to emulate the fidelity of the original arcade games and so able to create very faithful emulations of those games.

► came from Europe. In America, it remains something of an obscurity – the Amiga line would struggle for momentum in a slowly-recovering market where IBM PC-compatibles were gradually taking over businesses and Nintendo held a near-monopoly on videogames with the NES. It took until 1989 for the computer to receive one final major advertising push, after which it effectively ceased to exist in its own country – a far cry from what happened to the Amiga in Europe during the same period. Those people who'd worked so hard on building the system were all too aware of what was occurring elsewhere, in places like Australia, Germany and the UK. Jeff Porter, Commodore's director of product development, and the man who led the creation of the A500, recalls "All of the Apple Guys thought that the Amiga needed to be sold in high-end business computer stores! Really? It's a friggin' games machine. Sell it in Toys 'R' Us like the C64 and they'll fly off the shelf. That's one thing that Commodore knew how to do – sell low-cost home computers. So I had a battle every day with the US sales company to buy into that strategy. Fortunately, Germany and the UK, for the most part, bought into that vision lock stock and barrel – Winfried Hoffmann [CEO, Commodore Germany] took one look at the A500 and said, 'I know how to sell this baby. Give me one. I'll show you.' And he did."

"I had a battle every day with the US sales company"

Jeff Porter

The man who would inherit Commodore's sad state of affairs was Thomas Rattigan, former CEO of PepsiCo. Thomas' main aim was to cut costs and bring Commodore closer to profit, but also to oversee new plans for the Amiga line that would keep it going. The solution, as announced by Thomas in January of 1987, was to introduce two new computers – one of them, the Amiga 2000, was a high-end model, a powerful machine built for businesses and those who wished to create. The other was the low-end model, entirely catered towards the home market with the requisite power at a competitive price – this computer would be the Amiga 500. Jeff Porter would head up the production of the A500, in spite of protests from the original Amiga team. "The biggest challenge was that the guys that built the A1000 thought I was 'killing their baby'. It was already dying. After investing \$55M and only selling 77,000 machines, the ROI (return on investment) was not too good."



» Console owners would jealously look at the excellent *Xenon II*. At least until they got their own versions...

LIONHEART

1993

■ Thalio's hack-and-slash is a pretty good contender for the title of prettiest game on the Amiga, with beautiful worlds that are still striking to this day. With lengthy, involved levels and a whole load of enemies to encounter, the gameplay's no slouch either.

**MOONSTONE: A HARD DAYS KNIGHT**

1991

■ An RPG for as many as four players, where you try to find the keys to the kingdom. One of the more unique Amiga exclusives, and also one of the goriest too – there's no end of heads and limbs flying all over the shop.

PROJECT-X

1992

■ A frenzied shooter by Team17 that's quite possibly the most difficult of all the Amiga shooters. The challenge was such that most people couldn't manage to get further than the second level. There is a special edition that tones the challenge down somewhat.

**TURRICAN II: THE FINAL FIGHT**

1991

■ This is arguably the greatest entry in Rainbow Arts' classic series of action platformers, filled with lengthy levels and secrets. Despite appearing elsewhere, Amiga *Turrican II* is the only proper 16-bit version of the game.

WAXWORKS

1992

■ A dungeon crawler where you travel through time in order to break a witch's curse. Well remembered not only for its level of difficulty and the atmosphere of its surroundings, but also for the still somewhat scary lo-fi brutality of its death screens.



» *Lemmings* was a huge success for Psygnosis and it soon had DMA Design creating sequels and add-on disks.

The main difference between the A500 and the A1000 was in the streamlined design – the A500, much like the earlier Commodore 64 and 128, would have an integrated keyboard and external 'brick' power supply. In most other ways, however, the insides of the 500 were similar to the original A1000, with the same 512K memory out of the box and Motorola 68000 chipset. The big difference between it and the A2000 was expansion – the A2000 came with several slots for the likes of Video Toaster cards and extra floppy drives, whilst the A500's expansion capabilities were mostly limited to upgrading the RAM. But this fit the A500's streamlined philosophy – it would have everything a user needed out of the box, with all possible upgrades being completely optional. It was also considerably cheaper for Commodore to produce. "Because I came from the Commodore side of things, I knew Commodore's manufacturing very well," Jeff elaborates. "External brick power supplies were super cheap. Integrated keyboards were super cheap. Two-layer motherboards were super cheap. I got MOS Semiconductor (Commodore's chip fabrication division) to put the chips in plastic packages and improve the yields. And I knew the speed of all of the equipment in the factories, so I optimised the component selection to never have a bottleneck in the production line. Bottom line: Costs for the A1000 at \$600+ got reduced to \$200 for the A500, thanks to me! We sold it for \$400, and street price was \$500. That's pretty amazing margins, and the rest is history."

In spite of much-needed production improvements, there was always a level of disarray back home

Pushing pixels

We have a chat with Ocean's graphic artist, Simon Butler



What was it like creating graphics on the Amiga, after moving from the 8-bit systems of the time?

I recall it was a shock to the system to have so many colours and for sprites to be so much bigger after the horrible constraints of the 8-bit machines. It took a bit of getting used to, but it was just another part of the learning curve. I know that I relished the opportunity to push the animation a lot more than I had previously. That was great fun.

What art packages (if any) did you use and how effective were they?

It was the standard, Deluxe Paint. It did everything a games artist or even a hobbyist could ever require. I was still using it long after I had moved onto PC titles and was only forced to move onto another package many years later in order to retain a contract. To be honest, I was marginally proficient compared to a lot of people, and when I see some of the artwork created by today's artists it takes my breath away.

What companies managed to get the best out of the Amiga in terms of visuals?

I suppose the first name you think of is Psygnosis.

They really did push things graphically, but for me that was also their main fault. I saw them as being the perfect example of style over substance. The Bitmap Brothers were also a team that truly stamped their own graphical style across every title they developed. There were some amazing graphics during the 16-bit era, but benchmark teams? Psygnosis and the Bitmaps.

Which of the Amiga games that you worked on are you most proud of?

It would have to be *Addams Family*. It's the game I enjoyed working on most in my entire career. Great team, amazing design and freedom to do whatever I wanted. Fantastic times.

Why did you return to the Amiga in 2012 to start work on the *Sqrxz* series?

Money, pure and simple. Being a 2D pixel pusher I have painted myself into a very small pixelated corner of the industry where I have struggled for long periods without work. In 2012 I was approached to do some pixels for a game I knew nothing about called *Sqrxz*. It was quick, cheap and cheerful and, over the years, I have been called upon to change the graphics for a variety of versions.



AMIGA500

Amiga all-star

C64 maestro, Andrew Braybrook, on moving to Amiga



What was it like moving over to the Amiga 500 after working on the Commodore 64?

Short answer: it was fantastic.

I'd owned an Amiga A1000 at home for two years before I started writing games for the Amiga, on an A500. I could see what people were doing on it and had been learning 68000 assembler programming in preparation. Instead of getting three 8-bit registers and 16 preset colours I was going to get 16 32-bit registers and a palette of 16 or 32 colours from my own selection of 4,096. The CPU was also eight times faster and the instructions were much more functional. It was like the driver of an old Ford Anglia waiting for his Lamborghini to arrive.

How do you feel the Amiga enhanced your games?

Firstly we could visualise more clearly what we wanted to show in the games. We'd been working with various colour limitations on the C64, as well as memory limitations. We only had space for about 192 sprite images so we were always hitting the buffers there. The Amiga had 512K of RAM, which was also all video RAM so although the code was bigger on the Amiga, it was a lower percentage of the total space. The sound was also more controllable because it was playing real samples, and we had an extra sound channel.

What was it like to code compared to the home consoles of the time?

The home consoles were still technologically on a march. Rod Mack was working on our football game on the SNES, which could do more tricks with the playfield (rotation, scaling). Also, the consoles held on to character modes that the C64 had, and that arcade games had used so well. All platforms tended to have a software and hardware development kit, so they were getting more expensive. Being locked to bitmap modes on the Amiga, although it gave a lot of freedom, meant that the screen was much bigger (typically 16K), and needed a lot of attention.

What's your favourite Amiga 500 game by another developer?

Turrican II for sure. The Factor 5 guys pulled out all the stops, with Chris Huelsbeck doing seven-channel music, hardware sprites aplenty, ingenious scrolling technique that they shared with us for *Uridium 2*, big play area, great playability – very nice.

"The Amiga, like the C64, was a games machine"

David Mowbray



» *Captain Planet* may not be a very good game, but he was a good name to have on an Amiga bundle.

► that would throw things off track and frustrate Commodore's world-renowned engineers. "UK and Europe got it," Jeff says. "The US did not. It should've fired all the Apple execs that didn't know how to sell a \$500 games machine, and given the product to the C64/C128 sales guys that sold computers by the semi-trailer-load to retail." Thomas Rattigan's announcement of the new Amigas was just about the last thing he did before inexplicably being fired by Irving Gould, who then took over the CEO job from his home in the Bahamas. While there was always trouble on the home front, Commodore's international hubs were largely run autonomously, only ever seriously communicating with Commodore HQ a couple of times a year. And so, Commodore's UK hub enjoyed a comparatively serene existence – it hadn't topped the market up to this point, but the C64's sales were enough to make it one

of the most popular computers on the market. As the last generation's micros wound down, Commodore's European divisions were eager to get the new Amigas out there, believing them to be more than capable of getting the top spot. It wouldn't be straightforward, though – the Atari ST had successfully penetrated Europe, becoming the leading 16-bit computer on the market. STs were selling well in the UK. More than that, Atari had both created a market for the ST in France that it would never let go of, and overtaken Commodore in West Germany – once Commodore's European stronghold. At this point, the Amiga had barely broke the market at all, and Atari had enjoyed a huge head start in the region – overhauling Atari's ST certainly wasn't going to happen overnight.

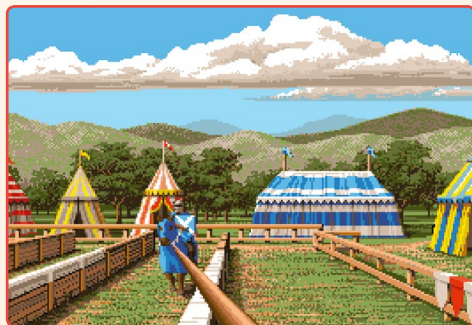
Looking at the main statistics, the Amiga and Atari ST are very comparable, with both computers based on the Motorola 68000 microprocessor. Indeed, when you consider that most computers were marketed based on memory at this time and Atari was already offering 2MB and 4MB ST models before anybody else, it could be said that the ST – in this very sellable regard – was the more powerful machine. But the Amiga had a couple of tricks up its sleeve that, before too long, would start to show the difference – it's 'Agnus' chip was very powerful, and, in particular, included a dedicated blitter that could run graphics routines without any strain on the computer's main memory, and a copper chip that allowed for multiple video resolutions and colour depths to happen on the same screen. The main video processor ('Denise') could split the screen area into multiple bit planes, allowing for as much as 32 unique colours on the screen at



» Team17's frenetic *Alien Breed* from 1990 was one of many games that defined the Amiga 500.

once. David Mowbray, previously a programmer at Flair Software, explains how this benefited games: "The Amiga, like the C64, was fundamentally a games machine. The machine was just more friendly [than the ST] when you're making a game – even on the screen itself, everything was separated onto different Bitmap planes, so, for example, you could have 16-colour art but have one of the planes just for your parallax layer."

Alongside Agnus and Denise was the third chip – 'Paula', which was responsible for sound and contained four sample-based sound channels, wholly different to the Atari ST which relied on a four-channel AY synthesiser chip. Chris Huelsbeck, a composer who worked on games such as *The Great Giana Sisters* and the *Turrican* series, explains the possibilities. "The Paula chip was really straightforward," he begins. "Its great power was in the capability to play recorded or digitized instruments and sound effects... essentially there was nothing in terms of audio or tones that you could not get out of the Amiga – the only limitation was memory and channels, and even then on that front we found ways to enhance it." One of those ways, funnily enough, would involve the use of an Atari ST – the A500's fiercest rival was an integral part of Chris' 'seven-voice' system that seemed to, as if by magic, nearly double the amount of channels the Amiga had," Chris says. "My colleague and



» Odds were, if you saw *Defenders Of The Crown* running on an Amiga 500, you'd most likely try to work out a way to own one.

Trouble in paradise

Jeff Porter talks about turbulent times at Commodore



What was the situation like at Commodore before the announcement of the A500 and 2000?

Things were pretty dire. The A1000 was critically acclaimed but financially a bomb. At \$1,295, it was too expensive as a home computer, and wasn't expandable enough to be a business computer nor did it have mainstream business apps. So the A500 at \$500 filled the home computer void, and the A2000 filled the 'can't expand this sucker' void. Although it took the better part of a year to pivot that way... the results speak for themselves. It was the right thing to do.

As head designer for the A500, how often would you interact with CEO Thomas Rattigan?

He was relatively hands-off. Of course there would be high-level meetings where the end result was, 'Jeff and his team just need to work a little harder and faster.' I remember one meeting where him and Marshall Smith had summoned everyone from R&D both in PA and CA to West Chester. Rattigan put his feet up on the boardroom table and said, 'Marsh, what do you think the most important thing for engineering to be working on now? I think it's the cost-reduced C128D.' You can imagine the gasps

coming from the Los Gatos team... 'Are you kidding me? Did he really just say that to the entire senior R&D staff of the Amiga?' Yes, he did.

Was there any perception inside Commodore that the A500 was a downgrade from the A1000?

Lots of fights with the Los Gatos crew. I kept hammering on the \$500 price point at retail – \$20 more for a detachable keyboard, \$30 more for an internal power supply, \$20 for a keyboard garage, you just blew the budget, guys! Sorry. Plus Jack and the Atari ST were just starting to eat our lunch and we had to attack with a product that could kill the ST. That last argument cleared the way with everyone at Commodore to let me build the A500.

In what ways did you feel that the A500 improved on the A1000?

Obviously the cost was the major improvement – same circuitry and same performance, but at a way cheaper price. I personally selected the keyboard – NMB real key switches... I loved that keyboard. I'm a pretty quick typer and I could just fly on that baby, that got cost reduced after the first year, but hey, the A500 was already a huge success by then to create very faithful emulations of those games.



Marketing magic

Commodore marketing director David Pleasance on the Amiga



What gave the Amiga 500 a better commercial edge over previous systems?

My belief is that it was the way we positioned our marketing – aimed squarely at our target audience – which was the slightly older child, perhaps getting ready to study for critical exams, from middle class or higher socioeconomic families whose parents wanted to be seen to be responsible enough to equip their child with the latest and best technology.

How did strike the deal for the Batman pack?

I had heard that Ocean Software had just been to Hollywood and had paid out \$1 million just for the rights to use the *Batman* movie title for the game they intended to produce. So I set up a meeting with David Ward and Jon Woods (joint managing directors of Ocean) along with Colin Stokes (sales director) and Paul Patterson (sales manager).

I told them, 'I am going to make you a proposition that you will either have the balls to go along with, or you will send for the men in white coats to come and take me away.' I told them that I planned to produce a pack – which if they said yes to me – [that] would feature *Batman* all over the box, and that the fact that there was an Amiga 500 inside was almost incidental. I promised we [Commodore] would be spending a massive amount of money marketing and promoting the pack, in conjunction with their own marketing parameters so we had a massive joint approach.

I said, '1) I want you to give me the game exclusively in my pack for two months before you release it as a game on its own; 2) I want to pay you very little money for it, and 3) I am only prepared to commit to 10,000 pieces.' Ocean expressed concern on two fronts: they were worried their dealers would be angry that the only way their customers could get hold of the game would be by buying a *Batman* pack [and they] had estimated it

was going to cost them a further \$1 million to actually produce the game, and were concerned this activity might affect the volume of games they had calculated they needed to sell in order to [make] a profit.

I explained to them that I personally felt – if the promotion was successful – the dealers would actually be delighted, as they would be selling lots of £400 packs instead of lots of £40 games. I explained that with my massive marketing budget added to theirs we would take over the retail channels completely, and I was confident they would do better overall if they decided to work with me.

Well they did have the balls to do it and the net result was, 1) Their dealers ended up much more than happy; 2) Ocean sold five times the volume they had estimated they would sell; 3) Commodore did not take just 10,000 pieces of *Batman* – we ended up taking 186,000 pieces – because that is how many *Batman* Packs we sold in the 12 weeks period to Christmas!!!

What was Commodore's relationship like with Ocean after that?

Absolutely fantastic. I can also say after the success of the *Batman* Pack I was approached by a vast number of games developers and publishers who would do almost anything to have one of their products included in [our] forthcoming packs.

Why do you think the system is so fondly remembered by gamers?

My opinion is that we released this incredible (easy-to-use) multitasking technology at exactly the right time. The world's youth were desperately hungry for something new, something which allowed them to show off and illustrate their creativity – and just take a look – all around the world we have many thousands of Amiga fans, many of them now holding senior positions in huge companies. I am so proud to have contributed my small part in this legacy.

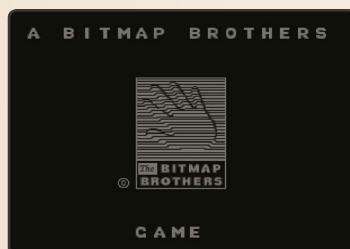
► friend Jochen Hippel coded the kickass core of the [ST] CPU mixer in order to play back four-voice Amiga music on the ST. With his blessing, I ported that back onto the Amiga and it was used first in the *Turican II Title Theme*, which to this day remains one of my best-known pieces." Essentially, a four-voice piece of music would be programmed on the ST, mixed down and then played back on the Amiga using only one of its channels, leaving three extra channels open.

Together, these chips would make up Amiga's 'Original Chip Set', or OCS for short. While the OCS had so much potential, it took time to fully realise this. The Amiga's earlier games, while flashy, were still traditional computer titles – a game like Cinemaware's cutscene-filled strategy title *Defender Of The Crown*, for example, was impressive compared to other computer games, but still very much a computer game – a strategy game, and one not very different from its Atari ST version. Arcade ports, on the other hand, were often worked on by small teams with limited time and resources at their disposal, so with the Amiga and ST both being 68000-based computers, ports of arcade titles – such as *Out Run* and *Super Hang-On* – were similar on both platforms and would not take advantage of the Amiga's features, often leading to them being described in magazines as 'ST ports'. It would take a couple of years until people would harness the Amiga's power to make original arcade-style shooters and platformers that were of similar quality, if not better than anything that could be found on consoles at the time.



► On the surface, Ocean's *Batman* is just another licensed game. As a pack-in title in 1989, it would make the Amiga into a superstar.

Defining developers



BITMAP BROTHERS

FIRST AMIGA RELEASE: 1988

■ Famed for hi-octane, futuristic games with soundtracks that could be club favourites, Bitmap Brothers gave us the likes of *Xenon 2*, *The Chaos Engine* and the *Speedball* series. Nearly every game that it released for the Amiga was a hit.

BULLFROG

FIRST AMIGA RELEASE: 1988

■ The land of Peter Molyneux, and home of the God game in the form of *Populous*. Not content with just that, it also released games like *Powermonger*, *Syndicate*, and *Theme Park*. Ultimately, Bullfrog was acquired by EA.



CINEMWARE

FIRST AMIGA RELEASE: 1987

■ One of the Amiga's original big developers, Cinemaware released cutscene-heavy games with minigames and a big emphasis on story, such as *Defender Of The Crown*, *It Came From the Desert*, and arguably its best title, *Wings*.

GREMLIN INTERACTIVE

AMIGA DEBUT: 1988

■ A studio that was successful throughout the Amiga's lifespan in a wide variety of genres. It made racing series such as *Lotus* and *Top Gear* and sports games like *Premier Manager*, but arguably its most successful title was 1992's *Zool*.



“It was like a turbo C64 in how it was put together”

David Mowbray

Things really started to shift in favour of the Amiga in 1989, as several games showed just what power the Amiga had lurking within. Psygnosis' *Shadow Of The Beast* is a major example, using the Amiga's copper chip to create a multi-layered landscape filled with parallax scrolling that ran smoothly. Simply put, the Atari ST didn't have these tricks at its disposal – while it could handle vertical scrolling fine, horizontal scrolling required almost everything on screen to move at once, making it slow and jumpy by comparison. While the development of the original Amiga had happened outside of Commodore, the A500 was in many ways an evolution of the C64, sharing a lot of its more coder-friendly aspects, such as hardware sprites and scrolling, as well as its slick, integrated, games-friendly design. In the end, a lot of the people who had previously preferred Commodore's old system found themselves drifting towards its new machine. David Mowbray had experience with both. “The Amiga was more in the vein of what I was used to,” he says. “I learnt 68000 assembly language and software sprites on the ST, and none of the hardware scrolling that I'd had on the C64 was there – it was a lot like the Spectrum, a very different way of working. Going from the ST to the Amiga was like going back home again – it was like a turbocharged C64 in the way it had been put together.”

Shadow Of The Beast was one of many pioneering games released for the Amiga in 1989, a year that also saw the release of *Lemmings*, *Xenon 2*, and *Populous*. These games would become synonymous with the Amiga and would set it out as clearly the superior games machine to the Atari ST, but games alone weren't enough – the computers themselves needed



» Games like *Turrican* proved that the Amiga 500 was more than capable of delivering arcade-like experiences.

to start flying off the shelves. Commodore's American HQ had largely disregarded the games market even after the launch of the A500 (Jeff: “We walked away from our shelf space at Toys ‘R’ Us and Sears, and that void was then filled by Nintendo and Sega...”), whereas Commodore UK was under no pretence that the A500 was anything other than a games machine – and it was the job of then-marketing director David Pleasance to maximise that. He would do so with the introduction of Entertainment Packs and bundles.

A typical Amiga bundle, such as the Cartoon Classics set from 1991, would of course focus primarily on games – in the case of this example, two very popular titles in the shape of *Lemmings* and *The Simpsons: Bart Vs. The Space Mutants*, as well as a lesser-known title with a recognisable name (*Captain Planet*) – because even if a



PSYGNOSIS

AMIGA DEBUT: 1986

■ This rose from the ashes of Imagine Software to form one of the Amiga's greatest software houses, with games like *Shadow Of The Beast* and *Lemmings* to its name. Later acquired by Sony, it would take that standard onto the PlayStation.

RAINBOW ARTS

AMIGA DEBUT: 1987

■ A software house that specialised in very challenging action games like *X-Out* and the *Turrican* series. Home to some of the strongest individual coding talents of the era, it would excel either on computers or consoles.



SENSIBLE SOFTWARE

AMIGA DEBUT: 1989

■ Jon Hare's studio was renowned for its popular games, often involving tiny little people running about. Strategy game *Mega-Lo-Mania* was the first to explore the format, and was followed by classics like *Sensible Soccer* and *Cannon Fodder*.

TEAM17

AMIGA DEBUT: 1991

■ Like Gremlin, Team17 would shine in almost any genre it put its hands to – whether it was top-down shooters (*Alien Breed*), one-on-one fighting (*Body Blows*), cute platformers (*Superfrog*), or annelid-based carnage (*Worms*).



AMIGA500



The inside story

Commodore engineer Dave Haynie talks Amiga 500



What was your involvement on the Amiga 500?

I was brought onto the fairly early Amiga 500 project from the 8-bit world, in 1986. I had already been learning to program the Amiga, as I bought an A1000 in 1985, not too long after they came out. We were trying to interest management in some new version of the C128, but most things were moving [towards the] Amiga at that time. So I spent most of that month learning the Amiga and A500 architecture, helping track down problems, that kind of thing.

Why do you think the machine struggled in the US compared to the Commodore 64?

Commodore marketing in the USA really had no clue how to sell the A500. It might look like an A500, but at the time the AmigaOS was more sophisticated than anything from Microsoft or Apple, so it needed a real computer store. Commodore wanted to sell in the same big department and discount stores that carried the C64, like K-Mart and Sears – doing this, of course, made it practically impossible to any computer store that wanted to carry the A500 to do so profitably. They all bought through distributors, but big national stores were their own distributors, buying directly from Commodore. And Commodore had done much the same thing with the C64: selling it originally in discount stores while it was still in computer stores. Some computer stores found the C64 being sold at a discount store for less than they paid their distributor. Commodore screwed up their own future by thinking about short-term gain in volume.

Why do you think it had so much success in Europe?

Kind of the opposite [to the USA] – they were marketed and sold correctly. Also, a different set of competition, less Apple, more smaller computers like Sinclair, Amstrad, Acorn. And an actual marketing budget... in Europe, you knew about the A500 if you read magazines or watched TV.

What's your favourite A500 game?

Marble Madness. It blew me away when it came out, and I spent lots of time testing it in the lab on new hardware. It's totally the case that, over the years, I got busier at Commodore and didn't play games much. I love computer games, but the problem is, they got so good, you could spend days solving one game.



» Arcade conversions on the Amiga 500 were hit and miss. The excellent conversion of *Super Hang-On* is one of the better examples.

“Oh well. It was a fun ride while it lasted”

Jeff Porter

► licensed game like this was not well-known or well regarded, the character, movie or TV show would be. These packages also usually contained the versions of Workbench and Deluxe Paint – which would feature on the box, albeit not as prominently as the games. All of this would be available for £359, then reduced to £299.

Many of these bundles were successful, but the one that stands above them all is the initial 'Batman Pack'. Alongside the ubiquitous Deluxe Paint II, the Batman Pack contained three games – *Batman* (naturally), *The New Zealand Story*, and *F/A-18 Interceptor*, filling the roles of the very popular licensed game, the popular arcade port, and a game that your dad would probably enjoy more than you did. But, of course, *Batman* was the main event, and quite a coup to get in such a pack – not only had the game just been released by Ocean, but 1989 itself was the peak of *Batmania* – the film was the highest-grossing movie of the year, and the aisles of toy stores were filled with *Batman* merch. *Batman* toys sold in their millions, and the Batman Pack

would be but one part of that, with no new computer or console around to compete with it in the Christmas period. The Batman Pack truly made the A500 a star – the success of it alone brought an estimated 2 million new people into the Amiga's user base. A year that had been the computer's last hurrah on American soil ended in Europe with its coronation as the most popular computer on the market.

During the Nineties, the Amiga continued to hold its ground against the 16-bit consoles of the day, further augmented by new models such as the A500+ (featuring the 'Enhanced Chip Set'), the A600, and the CDTV – a consilised A500 capable of running CD-ROMs. However, these products were beset by old Commodore issues, such as a lack of marketing sense and serious overspends on production – the original CDTV's CD-ROM drive, for example, cost 500 dollars. When Jeff Porter headed up production on a revised model, he found a different mechanism for the drive in Japan that cost \$15 for similar performance. The A600 was an even greater horror show – one that spiralled somewhat out of control. “Mehdi [Ali, then-CEO of Commodore HQ] hired a guy named Bill Sydnes to cost reduce the A500... good luck!” says Jeff. “He claimed he could half the cost of the A500 and Mehdi agreed. In the end, the A300 had to be renamed to the A600 since it was *more* expensive than the A500!” A lot of this was down to events back home – as Commodore continued to lose ground, it chose to squeeze as much as it could from its existing products rather than budgeting enough money for engineering and R&D to build better models. By the time the A1200 and 4000, Amiga's 32-bit line of computers, arrived in late 1992,



» The gameplay wasn't amazing, however *Shadow Of The Beast's* stunning visuals certainly captivated gamers.

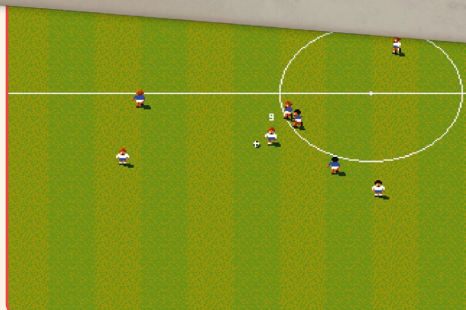




it was too little too late – Amiga-based games were now being matched by games from Intel 486-based PC's, and then surpassed by Pentium-based PC's. And so, games companies who had made their name on the Amiga started to look elsewhere – leaving the new machines with precious little in the way of big titles that weren't available on the PC. Those in the corridors of power hardly helped matters. "Mehdi introduced the A1200 the day after Thanksgiving for only a few dollars more than the A600," Jeff says. "He had a warehouse full of A600's, and no inventory of A1200's. Commodore nearly died that Xmas. He did it again the next Christmas and that was all she wrote."

For those in Europe, where the Amiga had enjoyed success, it was frustrating – despite its best efforts, the team couldn't stop Commodore as a whole from going down on 29 April 1994. "In spite of the fact that I should have had some major clout from the A500, they didn't listen to me," Jeff laments. "Oh well, it was a fun ride while it lasted." It's fair to say that the majority of Commodore's engineers who lost their jobs that day shared those feelings. Commodore UK, successful enough to not be liquidated, pooled its resources together and tried to take over the company as a whole. It was seen as the frontrunner, and at several points it seemed like Commodore UK's takeover (which would involve a name change to Amiga) was a done deal – but a long and drawn-out process ended with computer manufacturers Escom buying the Amiga in 1995, and Commodore UK's closure shortly thereafter.

Although it originated in a country where it would only ever be a bit-part player, the Amiga 500 was successful enough that in many ways you could



» Sensible Soccer was a huge success for Sensible Software. A hit sequel soon followed.

consider the UK and Germany Amiga's second home, particularly when you consider not only the sales of the machine, but the sheer amount of games and software that was created by European developers for the machine. The Amiga leaves behind no end of fine memories, and those who were closest to it leave a great legacy. Chris Huelsbeck sums up best by saying, "Amiga was a leap forward when it was introduced. I am looking back fondly and a bit sad how it ended, but I'll never forget the good old days, the makers, the creators and all the fans that made it happen!" *

We'd like to thank all of our interviewees for their help. Jeff's writings can be found at porterdigitalsignage.com/Blog.html. Chris can be found at huelsbeck.com. The author would also like to thank Adam Spring (Remotely Interested Podcast) and Zachary Weddington (Viva Amiga) for their input.



ROAD RASH



ROAD RASH RENEGADES



RANDY BREEN
PRODUCER (ROAD RASH 1, 2 & 3)



ROB HUBBARD
SOUND AND MUSIC (ROAD RASH 1 & 2)



DAN GEISLER
PROGRAMMER (ROAD RASH 1, 2 & 3)



MICHAEL HULME
ARTIST (ROAD RASH 3)



DON VECA
SOUND AND MUSIC (ROAD RASH 2 & 3)



Racing and fighting games used to keep to themselves, but change arrived on two wheels... and it brought weapons. Mitch Wallace brawls with the developers who brought mayhem to the Mega Drive

For many of today's gamers, the Electronic Arts logo brings to mind the war-torn maps of *Battlefield 1* or the marauding mechs of *Titanfall 2*. But long before publishing triple-A juggernauts like *Mass Effect* and *Dead Space*, a much younger – and perhaps more cautious – EA was going through somewhat of a focus shift. This pivot would ultimately give way to a trilogy of seminal cartridges that would forever expand the possibilities of the industry's humble driving game.

"At the time, EA wasn't really in the console business," begins Randy Breen, *Road Rash*'s producer. "They had done a couple Nintendo 8-bit titles, but I think it's known that there was some internal conflict regarding their appetite about moving into the console space. At the time, the memory of the Atari crash was still very present, so most of the company's focus was on PC games."

In the years following the infamous crash, EA had begun taking tentative steps back into the home console space, mostly in categories that the company identified as, according to Randy, "strategic" and in which they would "have the market". These areas were sports, which included the recently-released *John Madden Football* on the Apple II, Commodore 64 and DOS, and also racing, which lead to preliminary development on a game called *Mario Andretti Racing* on the NES. Some ways into the creation of this troubled title, lead programmer Dan Geisler was brought on board, and it soon became obvious that the game was moving in the wrong direction. ►

ROAD RASH



» Some awesome-looking character concept art from *Road Rash 3*.

» *Road Rash* was a huge success on release, eventually going Platinum. Dan Geisler has a plaque marking the achievement on his wall.

► “The producer, [Randy Breen], who was on that project [*Mario Andretti Racing*] had just finished up *Madden* and had also done *Indianapolis 500* on the Amiga and DOS,” Dan elaborates. “It was a straight sim, probably the most boring kind of racing you can get. Endlessly driving around the same f**king track for 500 miles, and in *real time*. Are you kidding me? Plus it’s a sim, so you’re not going to fudge it. If you wipe out, that’s it. You’ve lost the race!”

Mario Andretti Racing was all set to follow a similar formula, but Dan, along with Randy and fellow developers Carl May and Walt Stein, began brainstorming for a different kind of racing game, one that wouldn’t necessarily adhere to (possibly alienating) realism. Carl and Dan threw out quadrunners as possible racing vehicles (because of *Andretti*’s dirt track setting), while Randy, who was a Cafe Racing and Formula One enthusiast, suggested motorcycles. Dan says he

also rode a bike at the time, and this would lead him to formulating the franchise’s titular title. “I had taken a ride to Los Angeles to see some friends,” he reminisces. “I’d driven on Mulholland Drive and thought, ‘Man, If you wiped out here, you’d get some serious road rash’, which is something I had gotten in the past.”

And so Dan suggested *Road Rash On Mulholland Drive* for a possible name, which Randy used to pitch the game to higher-ups at EA. The name was eventually shortened to just *Road Rash*, and with the new name came a brand-new direction, one that bucked the simulation trend for something decidedly more accessible. Development also moved from the NES to the significantly more powerful and capable Mega Drive.

Dan was no stranger to virtual automobile software, seeing as prior to joining the team at EA, he worked on one of the first, if not the first, open world driving game: Spectrum HoloByte’s *Vette!* for Mac and DOS. His earlier coding on that pioneering title would form the framework for the team’s fledgling motorcycle racer.

“I had mapped out the whole city of San Francisco with street lights and other accuracies,” Dan says. “But there was one problem with San Francisco – it’s very grid-like, except for the freeways that ran over it. So I came up with a data structure to represent them. It was



» If you’ve ever been to California most of *Road Rash*’s locations will be instantly recognisable.

EVOLUTION OF MOTORCYCLE GAMES



3D DEATHCHASE

■ Mervyn Estcourt’s stunning Spectrum racer remains one of our favourite games on the system. Taking charge of a weapon-equipped motorcycle, the aim was to weave through a densely-packed forest of trees while trying to take down rival bikes. Each new stage brings further challenges due to the increasing number of trees found there.

EXCITEBIKE

1984

■ Arguably the grandfather of modern motorcycle racers, this 1984 Nintendo classic packs quite the 8-bit thrill. Presented with simple controls and a practical side-view perspective, the game is easy to grasp and contains plenty of jumps to conquer and obstacles to dodge. You can experience it on the Nintendo Classic Mini: NES.



HANG-ON

1985

■ In some ways the spiritual and completely unofficial precursor to *Road Rash*, Sega’s 1985 arcade groundbreaker is easily one of the industry’s quintessential motorcycle titles. Still endlessly playable, it’s a masterclass in early racing game design. Just make sure to experience it as Ryo Hazuki in *Shenmue* – Yu Suzuki would have it no other way.

JET MOTO

1996

■ SingleTrac’s 1996 classic evolves motorcycles into hoverbikes with an ability to traverse a whole variety of dangerous terrain, from deep ocean water and swamps to steel contraptions perched miles above dizzying cityscapes. Removing the rubber wheels allows for some pretty imaginative track design and plenty of stomach-churning death drops.



MOTOR RAID

1997

■ Sega’s 1997 Model 2A answer to *Road Rash*, this futuristic motorcycle arcade game features on-bike combat and gritty courses. Despite seeming a total shoe-in for the Saturn, the game was never ported to Sega’s 32-bit console and was instead relegated to arcade exclusivity. Up to four cabinets could be connected for multiplayer action.

using an algorithm to estimate the curvature of the road, and that actually became the basis for *Road Rash*.”

The game would go on to include California locations as tracks: “I used a data structure that I’d been dreaming about in the shower and perfected it,” Dan recalls. “With the Mega Drive’s memory, I could have done 802 miles of unique roads... I could have mapped out all of the California coast pretty accurately.”

Also brought onto the team after the project was well underway was Arthur Koch, who filled the unofficial role of lead artist. “I ended up becoming involved in almost every aspect of the game,” he says. “One of the problems was that everything had to fit into a 64-colour palette, and that was hard for a lot of artists to grasp. So I was getting all the art to conform to the technical requirements and training people on the in-house tools.”

According to Randy, a large portion of early development was devoted almost entirely to achieving a solid driving visual. “It took me about six months to really get a good road effect,” Dan adds. “And when I finally got that road effect down, people saw it and got ill, so I thought, ‘Ah. That’s it. It works.’ It’s tuned down in the final game, but I had some pretty amazing hills in that first iteration.”

Also different in that first version were the initially floaty bike physics, which ended up being a point of contention with management. Yet Dan convinced the suits to give him more artistic licence. “It was kind of tense,” Arthur adds. “I remember some closed-door meetings happening [with management]. I didn’t get to hear exactly what they were saying, but they were talking pretty loudly, and they weren’t agreeing.”

Road Rash refused to be a run-of-the-mill motorcycle racer. Cops, who would chase players down and arrest them if they crashed, were added for extra racing tension. “I went down to the police department and I talked this motorcycle cop into posing for photographs,” Arthur says, recalling a time before Google image searches. “I kind of find it strange that they even let me

do that. I doubt today if I could talk a cop into taking a half hour and posing for some photographs!”

Road Rash’s boundary-pushing was further solidified by giving players the ability to attack other riders. The introduction of combat, which was part of Randy’s original pitch “as a way to add entertainment”, would effectively leave the game without a neat, designated place on store shelves. And as Dan points out, this hurdle created a conundrum for EA’s marketing team.

“So I’m doing all the road effects, and meanwhile Randy is fighting the battles with management. EA is very marketing and sales driven, and they get uncomfortable if they can’t put something in a pigeonhole. Is this a motorcycle game? Is this a fighting game? Well, it was a fighting and a driving game, but before this, there were never any games in that genre.”

“The first game was confusing for everybody,” Arthur adds. “Marketing didn’t really know how to place it, because it was approached as a motorcycle simulation, and then we added combat, but the producers were sim guys. Dan and I came from an arcade/action background, so there was quite a struggle between the development team, the producers, and then marketing and the executives of how to place the game and how to describe what the game was.”

To Dan, the game was special, “*Hang-On* before us was a game I liked, but I thought it was limited – no hills, no punching, no kicking. I respect Yu Suzuki, but I had it in my mind that this was going to make *Hang-On* obsolete. And I think we kind of accomplished that.”

Despite *Road Rash* being only several months into development, EA wanted to promote the game at the

“I used a data structure that I’d been dreaming about in the shower...”

Dan Geisler



» The undulating tracks found in *Road Rash* meant it was possible to perform ridiculous jumps. Just watch how you land...

upcoming CES as a show of support for the Mega Drive, a prospect the team wasn’t exactly thrilled about. As expected, it didn’t show well and had to be repitched at least twice to avoid cancellation. After an extended year and a half in development, *Road Rash* released in the fall of 1991, and lo and behold, the genre-less moto wonder proved to be EA’s most profitable title to date.

Before Christmas of 1991 was over, the publisher had fully committed to a sequel, and now that the new genre had been established, there was much less internal conflict regarding its place in the market. “Marketing didn’t know what the f**k the first *Road Rash* was, but they loved the sequel,” Dan reveals. “Once they knew that new genre had been created, they were all over it.”

The timeframe to finish a *Road Rash* follow-up was indeed tight, but at least the team would be starting with a core game. “We had already gotten an

MOTO RACER

1997

■ Developed by Delphine Software and published by none other than Electronic Arts, this arcade title offers asphalt thrillseekers both traditional street and offroad tracks. The presentation is clean, the graphics are bright and simple, and the racing is downright fast. Utilising either LAN or split screen, it’s especially fun in multiplayer.



EXTREME-G

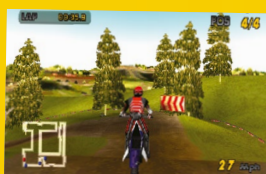
1997

■ An N64 futuristic racer from 1997 that answers the question: What would motorcycles be like in a dystopian, distant tomorrow? Part *Episode I: Racer* and part *F-Zero*, Acclaim’s Probe-developed speed-fest challenges the general notions of gravity, allowing players to race upside down as they battle it out for first place.

MOTOCROSS MANIA

2005

■ Opting for an entirely off-road approach, Take 2 Interactive and Deibus Studio’s two-wheel release sports some relatively drab graphics. Fortunately, the game makes up for the plain visuals with some fun, floaty physics and tracks that offer players decent freedom between jumps. The third game in the series adds bike-to-bike combat, *Road Rash*-style.



TRIALS FUSION

2014

■ This addictive title takes side-scrolling daredevil antics to an insane new level. Motorcyclists must navigate an increasingly difficult set of obstacle courses while completing challenges and setting new world records. But fair warning, the game does get infuriatingly difficult, so having a few spare controllers handy might not be a bad idea.

RIDE

2015

■ Milestone’s exercise in the motorcycle arts is perhaps the pinnacle of two-wheeled driving simulations. It rides the arcade/simulation line, a la *Gran Turismo* or *Forza*, and thus doesn’t alienate newbies. It also has all the graphical prowess we’ve come to expect from today’s software, as well as plenty of real bikes to choose from.



WEAPONS OF CHOICE

Well, you're hardly going to win by playing nice...



CLUB

■ Classic, blunt and effective, nothing beats the Neanderthal simplicity of the common cosh.

Easily stolen from other riders and co-opted for good ol' fashioned bludgeoning.



CATTLE PROD

■ Sometimes blunt force just won't suffice, and the stakes call for something with a tad more voltage.

Charge it up, reach out and give an unsuspecting biker a suitably shocking, 'How do you do?'



CHAIN

■ Nothing says road rage better than a healthy length of rusty metal linkage. The user directions are

simple: one hand stays on the throttle while the other swings a lasso of tetanus, terror and pain.



MACE

■ If there's anything that puts a damper on dangerous bike competition, it's a can of mace.

Useful for keeping the freeway mosquito-free and melting the faces off riders who venture too close.



NUNCHAKU

■ Contrary to popular belief, gaming ninjas don't have a monopoly on this versatile martial arts weapon. An unorthodox tool that mixes surprisingly well with illegal motorcycle racing.



OIL CAN

■ Taking note from *Mario Kart*'s trolling banana peel, these buckets of black sludge can be dumped

across the roadway to wreak havoc on the competition's traction.



CROWBAR

■ Sure, one could use this metal tool as intended and pry open a stubborn box or door. But why not experiment

a little and pry the nearest rider clean off his bike seat? Robbers don't know what they're missing.

► extension on the first one," Dan says. "EA asked for it in a year and it took a year and a half. Of course, EA wanted [*Road Rash 2*] for the next Christmas, which was pretty outrageous to get it all done. On the first game, we spent a lot of time on the tech, just getting the tools and doing it right and getting everything together. But with the sequel, we had all that already going from the start, so we could focus on the gameplay, the weapons, and then really enhancing the characters and upgrading the animations."

It was decided that *Road Rash 2* would leave the sun-drenched asphalt of California to explore the rest of the continental United States, with tracks set in Arizona, Vermont, Tennessee, Alaska, and Hawaii. "I was trying to maintain a certain progression through the fantasy of the product," Randy says, "which was that the first *Road Rash* was a roots-oriented thing. It happened locally, and people would run these races surreptitiously and do them in back roads where nobody knew about them – kind of a *Fight Club* thing. And they gradually expanded outward."

"They're all based on the actual locations," Arthur adds about the tracks. "Some of the artists basically reduced the colours of a photo, while others of us just took [a photo] as reference and drew on the computer."

The sequel also introduced a more streamlined menu system, a boosting mechanic for the bikes, and a chain for a second weapon. "For swinging the chain, I actually took videotape of myself," Arthur says. "That was so I could go frame-by-frame through the movements and understand the body mechanics behind the animation."

But *Road Rash 2* didn't simply introduce new content; it completely revamped the first game's take-turns multiplayer mode into something two people could play simultaneously. "Essentially, the main game was the same engine, but the big new tech was the multiplayer split-screen, which added a whole new

“*Road Rash 2* was the first game in which you could beat, and get beaten, by a cop”

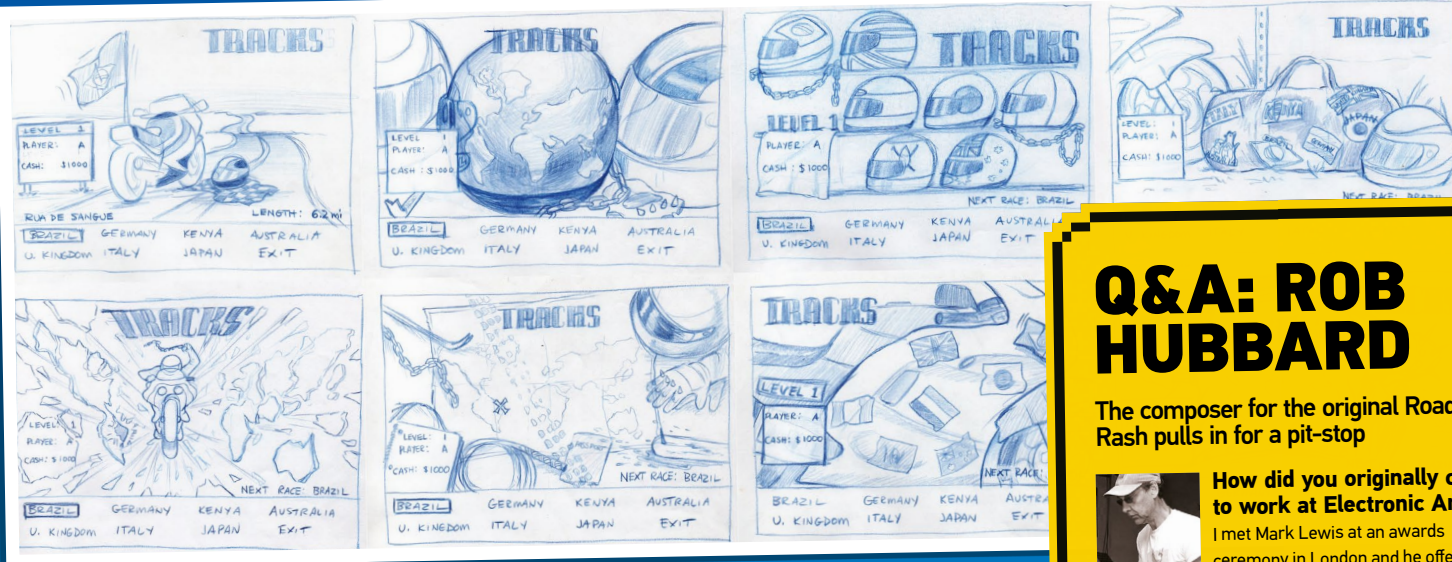
Arthur Koch

dimension," Dan explains. "And that was a bitch. I think I spent about three months just doing that." And as Arthur adds, they were pushing the Mega Drive substantially. "It put more limitations on us because we were showing twice as much stuff on the screen, and it slowed the frame-rate down which took away from the gameplay. The hard part about the first game was going to the artists and telling them they couldn't get that much art on the screen at once. But in the second game, the split-screen made things even more limited."

Also new in *Road Rash 2* were charming cutscenes that would play at the end of races. For example, if the cops caught a player, they would shove him into the trunk of a police cruiser, or if a player didn't get a podium finish, an old woman would deliver a proper cain-beating. "We initiated this idea of a cinematic sequence as a reward for how you performed," Arthur says. "I had to do them in low resolution to fit into memory. [The characters] were what we referred to as 'Little Dudes'. They were ten-pixel-tall animations, and those we roughly storyboarded out." Another notable inclusion in *Road Rash 2* was a pre-ESRB 'first' of sorts: Law enforcement could now take damage and also fight back, whereas in the first game they were immune to player attacks and could only bump into other riders.

"*Road Rash 2* was the first game in which you could actually beat, and get beaten, by a cop," Arthur says. "It





» Some concept art from *Road Rash 3* showing off different versions of the track-select screen.

was pretty controversial at the time, because that was around when Rodney King got assaulted, and that was the first time the American public had really seen police brutality. EA also had a 'no blood' policy, so they really tried to shy away from violence in games. We actually didn't know whether or not we should keep it in."

But not everything changed in the sequel. Returning in *Road Rash 2* would be wipeouts. "From the first game, making the crashes look cool was part of the focus," says Randy. "We were making reference to *Roadrunner* and other cartoons where the villain gets beat up. Even though it set you back, it was still fun to watch." Arthur, who brought about the crashes, adds info on their origin: "I had worked on *Madden Football* and *Lakers Vs. Celtics*, and I was disappointed with the tackles and the falls and the fouls," he says. "I thought they could be a lot more dynamic. So I suggested that we devote more frames of animations to the crashes."

Road *Rash 2* released in 1993 and, according to Randy, sold better than the original. But as Dan explains, the greenlight for *Road Rash 3* wasn't exactly a given. "There was a certain gap between *Road Rash 2* and *Road Rash 3*, because, well, let's just say I wasn't fairly compensated and I was going to leave the company after *Road Rash 2*," he reveals. "They wanted me to do *Road Rash 3*, but I really thought that we had pushed the tech

as far as it could go and there wasn't a whole lot more to offer. I had accepted an offer from Crystal Dynamics and EA was trying to pull me back in. I said, 'Look, I didn't get shit for this one or that one, so if I'm coming back, I want this much up front.' And they agreed. I'll tell you, though, it wasn't enough to buy a couple of bikes, and it definitely didn't pay off my mortgage."

Once back at EA, Dan was placed on a team with then-new designer Amy Hennig working on a Michael Jordan game. The project ended up not being a fit for Dan, or as he puts it, "there just wasn't that synchronicity on the team that you need". So out of that frustration came the beginnings of *Road Rash 3*.

"One day when I was a little bit pissed, I ran into Bing Gordon [VP of Marketing], and I said, 'You want *Road Rash 3*? And he said, 'Want to do it?' and I said 'Yeah, I'm thinking we could do that quicker than we'll get this other game out, and we'll beat 'em to market, and they'll go to the bargain bin and we'll go to the top of the charts.' So he said, 'Alright, I'll get your team.'"

Recruited from Cinemaware specifically for the team in question was Michael Hulme, a videogame artist with traditional animation experience with Disney (*Darkwing Duck* and *Rescue Rangers*) and Warner Brothers (*Tasmanian Devil*). "They kind of sat me down and said, 'We have directives saying this is going to be EA's last Mega Drive game, so anything you've ever learned, any trick, any technique – throw it in! I had played *Road Rash* and *Road Rash 2*, so it was just getting to know that history and then looking at it and thinking 'How can we plus this? How can we make it feel like it's part of the same lineage but really take it someplace that people haven't been before?'"

Since the Mega Drive had been relatively maxed out in terms of technology, and marketing wanted a "big new feature", it was suggested that the third game

Q&A: ROB HUBBARD

The composer for the original *Road Rash* pulls in for a pit-stop



How did you originally come to work at Electronic Arts?

I met Mark Lewis at an awards ceremony in London and he offered me a contract to work at EA in California for a couple of months. After that finished they offered me a full-time job.

What is your favourite music track from *Road Rash* and why?

That would be title track. It had a big digitized kick snare drum and quite a wild guitar solo which I can barely remember!

What were some of your influences in regard to composing music for games?

Brecker, Corea, Mahler, Stravinsky, Parker, Emerson, Jarre, Larry Fast. And loads of others.

How did you come to be involved with the *Road Rash* series?

Simply because I worked for EA, and it was a high priority project, with good sales potential.

What was your creative approach to soundtrack composition?

Just to try to create an action motorcycle vibe, with motion as reflected with the graphics.

Regarding the Sega Mega Drive and its technical limitations, what were some of the challenges you faced while composing music for the 16-bit system?

At the time, the Sega [Mega Drive] did not seem to have technical limitations. After all, the main state of the art prior to the Sega [Mega Drive] was the NES or the IBM/Tandy computers. Having an FM chip and a dedicated Z80 with sample playback was, at the time, pretty cool. Since I was familiar with FM through the DX7, I had a pretty good idea of what it could do.

Is there anything you wish you could have done differently/anything you're particularly fond of?

Not really. For the time, the game was pretty state of the art.

How do you look back at your time working on the first two *Road Rash* games?

I always enjoyed working with Randy Breen, the producer. It's always much better if you get on and have respect for the producer and the whole team. Of course, the teams back then were much smaller and closer, so it was easier to get that sense of empathy and camaraderie.



» Here's a photograph of the original *Road Rash* team looking as menacing as they possibly could.

BURNING ACROSS AMERICA

Prepare for the road trip of a life time... just bring your favourite lead pipe and a few bandages

ALASKA

ROAD RASH 2

■ Easily the most difficult track in *Road Rash 2*, this frigid environment showcases powder-capped mountain peaks and snowmen. Lucky riders may even catch glimpse of a meandering moose.

REDWOOD FOREST

ROAD RASH

■ Try not to be too impressed by the coniferous giants lining this scenic roadway, which can grow up to 350 feet in height. The turns are especially sharp here, so one false move can quickly spell disaster.

GRASS VALLEY

ROAD RASH

■ A city that dates back to the California Gold Rush, this hotspot makes for excellent racing fodder. Make sure to wave at the farmers and their livestock while burning copious amounts of rubber.

VERMONT

ROAD RASH 2

■ This cozy expanse of New England roadway is awash in reds, golds and greens – the quaint backdrop for aggressive motorbiking. Just don't let the stunning colours distract you from the occasional bump.

SIERRA NEVADA

ROAD RASH

■ One famous mountain range makes for one infamously difficult track. Brimming with brisk air, pine trees and traffic, Rashers need to be extremely vigilant regarding sudden turns and killer corners.

PACIFIC COAST HIGHWAY

ROAD RASH

■ Taking place on the Pacific Coast Highway, this race is relatively straight-ahead with some intersections, sand clusters and decent hills to navigate.



TENNESSE

ROAD RASH 2

■ These roads are rendered slippery by the misty mountain air, and a pesky wind doesn't make things any easier. Keep an eye out for motor homes and a fitting church in this Bible Belt dash.



HAWAII

ROAD RASH 2

■ Great for achieving high speeds, this dash across the USA's own Pacific volcanic island is populated with palm trees and huts, as well as an ominous – and dormant – cinder cone in the lush, tropical distance.



PALM DESERT

ROAD RASH

■ As if burning rubber wasn't enough, this location adds blistering temperature to the mix. Sun-baked skulls dot the sweltering roadway, while a gnarly jump provides a bit of reprieve from the relentless heat.



ARIZONA

ROAD RASH 2

■ Appropriately arid and filled with saguaro cacti, this southwestern stretch of dry highway awards racers with the occasional adobe dwelling and breathtaking views of the native red-orange rock formations.

“Randy had a high-end motorcycle that we used for a lot of the shots”

Michael Hulme

► would go worldwide with its locales, taking players to new tracks in Australia, Kenya, Japan, Italy, Brazil, Germany, and the United Kingdom. "I painted a bunch of concept styles from the different countries," Michael recalls. "The paintings were rough concepts. They were quick, storyboard-type things, and in four days, I had ten paintings done. I tried to get a different palette for each location so they felt different. There were ten originally, and then we whittled it down to seven in the end."

Also debuting in this iteration would be new weapons, like a mace, a crowbar, and even a cattle prod, all of which players could hold onto between races, a first for the series.

But perhaps most interesting of all is the fact that the game was being developed in parallel to *Road Rash*'s 3DO debut. The titles shared production assets, and as Randy puts it, *Road Rash 3* was a "hybrid product".

"*Road Rash 3* was occurring at an interesting time," he continues. "We were starting to look at the 3DO, and we were looking at other techniques for creating assets. We were also looking at the Mega-CD. It became a bridge product at some level between *Road Rash* on the Mega Drive and *Road Rash* on 3DO, which was developed with a different team. I was bringing some ideas and techniques across in both directions."

One of those shared ideas was the concept of digitized motorcycle riders, a feature that was brought on by an onslaught of new consoles and technologies. "Back in 1995, the first PlayStation was just showing up," Dan recalls, "and Panasonic came around every six months with their CDi, talking about how everything was going to be an interactive movie. So EA wanted to go with a more cinematic, realised look."

The 3DO was a next-generation piece of hardware and could handle digitised characters with relative ease, but getting those same images onto Sega's aging machine proved to be quite the challenge. "The 3DO assets had to be repurposed dramatically for the Mega



► Here's the original *Road Rash* team again, this time from a 2007 reunion.

Drive," says Randy. "Effectively, what we had set up was a local stunt rider in the studio, and he was in a suit that was basically colour-coded so that we could strip it from a green screen. Then the artists would reassemble those images, touch them up and figure out how to make them work on the Mega Drive."

Also of note were the in-game characters that would speak to players between races, who were actually all EA employees. "Most of them were people on the team," Michael says. "We dressed up as these different characters based on the locations of the levels and had a photographer come in. It was a blast! Randy had a high-end motorcycle that we used for a lot of the shots."

Road Rash 3 released in 1995 and, as Randy says, sold better than both the first and second games. "EA hosted this launch event at EA studios and brought in the press and everything," Michael remembers. "I don't know how much money they spent, but they decked out this area with motorcycles. They brought in palm trees for the Brazil level, and they had me go and do a design that went on custom *Road Rash 3* T-shirts."

So with that, the original trilogy came to a checkered finish. Of course, the series went off to burn rubber on other platforms, but it can be argued that the original spark has never quite been recreated. "It gives me the greatest joy to see people still enjoying the games and having such fond memories," closes Dan. "*Road Rash* popped up on Reddit one day, and it was just great to see how many people had wonderful memories with their brother, or their friends, or their dad who they rarely spent time with. The realisation of how many lives were enriched by this series – it's a truly magical thing." ★

Huge thanks to Randy Breen, Dan Geisler, Arthur Koch, Michael Hulme, Rob Hubbard, and Don Veka for sharing their stories!

Q&A DON VECA

Road Rash 2 and 3's audio maestro gives us a glimpse into the studio...



What was your creative approach to composing the soundtracks for both *Road Rash 2* and *Road Rash 3*?

To be honest, I just ripped off all my favourite jazz fusion players. This was the early Nineties, and I came up on the late Seventies fusion era: high-intensity music. I thought the high-energy fusion thing would be the perfect vibe for *Road Rash*. I'm talking Jaco Pastorius, Jeff Beck, Jan Hammer, Billy Cobham, Lenny White, Chick Corea, all those guys. I took all I had learned from them, put it through my internal 'game music filter' orchestrated it using the very limited music systems we had back then.

Were there any particular challenges with composing music on the Mega Drive?

Oh, hell yeah – lots! There was only one mono sample voice available, then you had a handful of four-op FM voices. The trick was to use your only sample voice for the most important instruments, so you had to kind of 'multiplex' the voices so only one sample was playing at any one time. I used the sample voice for the drums. Kick, snare, and hi-hat could all play, but never on the same beat. Then the bass and chordal voices were held by the four-op FM voices (which were a trip in their own right, and you could use a handful). My secret weapon here was that our awesome audio engineer, Jim Sproul, discovered that none of the other game systems were using the Z-80 chip on the Mega Drive, so we could use it exclusively for sound. It was extremely limited, though; you could only play a simple waveform, like a square wave, but you could have lots of them. I'd write a lead line in a MIDI track, then duplicate it, but I'd time-shift each MIDI track by a few milliseconds, and lower the MIDI volumes more and more on each delayed track. This way, I could create a really convincing lead guitar/synth sound.

How do you look back at your time working on the *Road Rash* games?

I have two games that I look back on and really love: *Road Rash 3* and *Dead Space*. The difference is that on *Road Rash* I was a young sound designer, so it was all new and cool. I loved every second of the project. It was nothing but fun, and I didn't feel any pressure, because it was just making cool stuff. *Dead Space* was a great project too, but I was an audio director with lots of responsibility, running a big team. Many late nights, and I missed my kids' summer vacation. My advice to young game audio folks: Don't accept a promotion past a lead. Keep making cool shit and stay away from politics and management.



► The *Road Rash* engine was continually pushed over all three games, with the last being particularly impressive to look at.

THE LEGACY OF RESIDENT



EVIL

IT MIGHT NOT HAVE BEEN PATIENT ZERO IN THE HORROR EPIDEMIC, BUT RESI SUCCESSFULLY MUTATED THE GENRE INTO THE TEMPLATE WE KNOW NOW. **NICK THORPE** SPEAKS TO HORROR DEVELOPERS TO ASSESS THE SCALE OF RESI'S SPREAD ACROSS THE GAMING WORLD...

MASTERS OF HORROR

The developers we spoke to...



MASACHIKA KAWATA
Producer,
Capcom



CORY DAVIS
Cocreative director,
Tangentmen



THOMAS GRIP
Creative director,
Frictional Games



WRIGHT BAGWELL
CEO, Outpost
Games



SAM BARLOW
Independent
videogame
director

There's a famous saying which states that there are only two certainties in life, and while death and taxes are both inevitable, we're convinced that there's at least one certainty

too few accounted for. You see, there's always a pedant out there ready to pop up when you least desire it, and we're about to lure them all out of hiding with the following statement: *Resident Evil* defined survival horror. "But **RG**," they cry, "there were horror games before *Resident Evil*! And really, didn't it just do a lot of what *Alone In The Dark* did?"

The key difference is in that little term 'survival horror' – nobody was using that before 1996, but it was the single descriptive phrase Capcom would return to. Upon loading *Resident Evil*, you'd be informed that, "You have once again entered the world of survival horror." Go back and take a look at the front cover of *Biohazard* (*Resident Evil*'s Japanese name) for the PlayStation, and the words 'survival horror' are right there on the cover. So the term survival horror is very much a *Resident Evil* invention – and within just a few years, the entire genre was being called by the name Capcom had given it. So while *Resident Evil* didn't invent survival horror, the series most definitely defined it and inspired a whole host of imitators.

Yet survival horror doesn't necessarily define *Resident Evil*. The series managed to reinvent itself



» Secondary protagonist Barry Burton is a beloved character, and emblematic of *Resident Evil*'s B-movie appeal.



» This ominous shot shows crows perched, waiting for you to fail at this room's puzzle.

so drastically with *Resident Evil 4* as to be considered more of an action game, and that game's influence has been primarily felt in this genre. So when we talk about the legacy of *Resident Evil* here, we're talking about the first age of its design – fixed camera angles, tank controls, limited inventory and all.

As is commonly known today, *Resident Evil* was originally conceptualised by general producer Tokuro Fujiwara as a spiritual remake of *Sweet Home*, a Famicom RPG based on a Japanese horror film, to be directed by Shinji Mikami. That game had included many elements that would later make it into *Resident Evil* – the mansion setting, supernatural enemies, a heavy emphasis on puzzle solving and inventory management, the gradual revelation of the game's plot via diary entries and other notes, and even the opening door scene that serves to transition between rooms. Despite this, the original plans for *Resident Evil* didn't have a tremendous amount in common with the final game. Initially, the game could be played co-operatively, and the cast was comprised of cyborg protagonists, including the hulking Gelzer and diminutive Dewey as well as the eventual protagonists.

Realising that you wouldn't feel much of a sense of fear for cyborgs, especially given the original plan for a lone mastermind as the antagonist, writer Kenichi Iwano rewrote the game's scenario. What he came up with was the concept of a mansion in a remote forest, ►

CORY DAVIS

Here They Lie's codirector on the impact and reach of Capcom's masterpiece



When did you first encounter the original *Resident Evil*, and what impression did it make?

Resident Evil came out when I was a sophomore in high school, and I remember it having a big impact on me.

I was a huge fan of horror in general, but specifically of horror games like *Doom*, *Splatterhouse*, and *Castlevania*. *Resident Evil* felt different. Instead of a horror-themed carnival ride, the entire experience came together as a device for creating realistic tension and dread in unpredictable fight-or-flight scenarios. *Resident Evil* stuck with me when I wasn't playing it – this mechanism for creating fear... haunting me until I had the courage to jump back in for more.

What design choices heighten the feeling of dread in *Resident Evil*?

The apparent roughness in the design choices really made *Resident Evil* feel antagonistic to me as a player, and that was very attractive to me. The game mechanics themselves remind me of the way I feel in real life when presented with a frightening scenario. Even the limitations of the camera add to the heightened tension as you are constantly trying to get a better look at the threat that is coming at you.

What stands out as the most memorable moment from the first *Resident Evil* to you?

This is probably a cop out, but those damn zombie dogs got me the first time, and still get me to this day. The shocking way that they leap into the environment, and the horrifying whimper they make when you finally kill one... it all gives me the shivers.

What elements of *Resident Evil*'s design have you incorporated into your own horror games?

The oppressive feeling I felt in *Resident Evil* is something that I have pushed in some way, in nearly every game I've worked on. The scarcity of powerful weapons and ammunition can really allow you to walk the razor's edge of power fantasy, and anxiety-driven terror. Dangling a power-fantasy carrot just out of reach, and then requiring the tactical, skilled usage of scarce weaponry, ammunition, or other resources in high-tension situations is an extremely effective combo. I've always attempted to be as successful as *Resident Evil* was at creating a peaceful, unassuming lull in the combat, horror, and overall tension – just long enough to lower your defences and open you up for another round of terror.



» *Here They Lie* is a terrifying horror game that's available in VR, much like *Resident Evil VII*.



» Though primitive now, the gore and violence in *Resident Evil* was considered extreme in 1996.

“THE DESIGN OF RESIDENT EVIL IS A STRANGE BREW OF PANIC-INDUCING SURVIVAL MECHANICS”



» Unusual puzzles lead to odd situations like Chris trying, and failing, to read music.

► which has recently been the site of mysterious murders. The local police send in their elite S.T.A.R.S. (Special Tactics And Rescue Service) team to investigate, and after Bravo Team disappears without a trace, your job is to take control of an Alpha Team member (Chris Redfield or Jill Valentine) and find out what has happened. Taking refuge in the seemingly-abandoned mansion, the protagonists soon discover that it was secretly a scientific facility operated by the shadowy Umbrella Corporation, and is teeming with zombies and other mutated creatures.

The team's planning process might not seem particularly cohesive, and this is something that has always been questioned by fans. “The design of *Resident Evil* is a strange brew of panic-inducing survival mechanics,” says Cory Davis, an accomplished designer of horror games whose work

includes *F.E.A.R.*, *Condemned 2: Bloodshot* and VR gem *Here They Lie*. “There's always been a lot of debate around the ‘clunkiness’ of the movement, camera, shooting, and UI elements in the original design, and whether or not this was intentional.”

At least some of it was definitely unplanned. The game was initially intended to be played from a first-person perspective – a feature which had numerous benefits such as a limited field of vision and intuitive movement. However, this was quickly scrapped due to the limited 3D power of the PlayStation. Instead, Capcom's designers adopted the use of polygonal characters over prerendered backdrops, a technique seen in the earlier PC title, *Alone In The Dark*. This enabled the team to use high quality models for the characters and enemies, but stuck them with a fixed perspective for each scene.

Ultimately, the camera was something that the team was able to turn to its advantage. “You have this sort of tunnel vision, and are constantly unsure what things that might lurk around,” explains Thomas Grip, designer of *Amnesia: The Dark Descent*. “This means you start to imagine what dangers might be near and eventually you end up scaring yourself basically.” Wright Bagwell, a veteran of the acclaimed *Dead Space* series, concurs: “When things get quiet and rooms feel mysteriously empty, people freak out – they expect something to happen, and keeping them in that state of tension is where the real magic of any horror game

BY THE NUMBERS

We take a look at just how successful Resident Evil is

RESIDENT EVIL 1996

PLAYSTATION, DIRECTOR'S CUT, DIRECTOR'S CUT DUALSHOCK



SALES:
5.8 MILLION

RESIDENT EVIL 2 1998

PLAYSTATION



SALES:
5 MILLION

RESIDENT EVIL 3 NEMESIS 1999

PLAYSTATION



SALES:
3.5 MILLION

RESIDENT EVIL CODE: VERONICA 2000

PS2, DREAMCAST



SALES:
2.2 MILLION

RESIDENT EVIL REMAKE 2002

GAMECUBE, PS3, XBOX 360, DL, PS4, XBOX ONE



SALES:
2.7 MILLION

RESIDENT EVIL ZERO 2002

GAMECUBE



SALES:
2.5 MILLION

RESIDENT EVIL 4 2005

GAMECUBE, WII, PS2



SALES:
5.9 MILLION

RESIDENT EVIL 5 2009

PS3, XBOX 360/DL



SALES:
7.1 MILLION

RESIDENT EVIL 6 2012

PS3, XBOX 360/DL



SALES:
6.6 MILLION

* Source: Capcom Investor Relations



or film happens. Nothing that you put on the screen is scarier than just letting peoples' imagination run wild."

Indeed, Capcom's design for the Spencer Mansion incorporated many short hallways and winding paths specifically to hide oncoming horrors from the player, but the moans of the zombies could often be heard way before you actually encountered them. The oppressive atmosphere proved effective in sustaining tension, but needed to be broken occasionally. "People are easily desensitised to scares and can easily recognise patterns," notes Wright. The *Resident Evil* team guarded against player complacency by mixing regular sections with plentiful enemies, lengthy puzzle-solving sections and the occasional jump scare – most notably, when dogs crash through the windows of a seemingly-empty corridor. This model of pacing is something that Wright has applied in his own survival horror work: "We spent a lot of time removing things from the game on *Dead Space 2* so that players didn't fatigue of combat, jump scares, and other surprises."

The effective use of restraint is what made *Resident Evil* so successful. Slightly awkward controls aside, the player is given the ability to run from zombies, or fight them. Healing items are relatively plentiful, and as long as you can make it to a room with a typewriter, you can save your game. But you're subject to a number of restrictions – you can't deal any damage while you're moving, and your ammunition is limited. While you might see multiple healing herbs ▶

» *Resident Evil* was never just about human zombies, as this mutant plant demonstrates well.



» Camera angles were expertly chosen to avoid showing the player advantageous viewpoints.



» *Resident Evil 2* shifted the setting to the disaster-stricken streets of Raccoon City.



“SEEING IT FOR THE FIRST TIME, I THOUGHT HOW AMAZING AND POLISHED IT LOOKED”

Masachika Kawata

► in a room, your limited inventory means that you can rarely carry more than one, forcing you to leave others behind. Even your ability to save is limited by the need for Ink Ribbons. Ultimately, you're forced to eliminate only high-priority threats. "The way the game forces you to traverse the map and learn which spaces are safe or not allows you to really build up some suspense and dread," notes Sam Barlow, whose design and writing credits include *Silent Hill: Origins* and *Silent Hill: Shattered Memories*. "You have to (frequently) backtrack through narrow corridors, where you know there's a good chance of you taking a hit from a zombie you left behind."

The use of zombies as a primary enemy proved to be a great fit for this gameplay template. They're slow enough to avoid, but resilient and dangerous in groups or tight spaces. "They're somewhat predictable and understandable... so it's easy to weigh the odds and feel them tip against you," notes Sam. "Zombies aren't about the primal dread of some horror, but tap into a rising panic that works well with videogame mechanics." For Thomas, the zombies also represent a smart technological choice. "Creatures like zombies are also very good for AI," he notes.



» *Resident Evil 3* kept the urban setting and ramped up the action, adding explosive barrels and better weapons.

"It makes sense for them to just stand around in a location staring into a wall, if they bump into objects as they try to pathfind towards the player it is just part of who they are and so on."

This what sets *Resident Evil*'s survival horror template apart from other horror-themed games. With more flexible controls, plentiful ammunition and an unlimited inventory, the game would be a power fantasy. However, *Resident Evil* forces the player to cope with strict limitations – you don't want or even try to eliminate every threat, but instead try to make smart use of the resources you have to make it out of your predicament alive.

I wasn't working on the series when the first game came out, but I was working on something else at the time and I distinctly remember the first time I ever saw *Resident Evil*," remembers Masachika Kawata, now a veteran of the series who is currently producer on *Resident Evil VII*. "The bug check QA period for my title and *Resident Evil* were aligned at the same time – and back in those days we didn't have staff that did QA specifically. The dev team just had to do all the bug-checking themselves," he explains. "When I was doing the bug-check on my game I saw the guy next to me was playing what I later knew was *Resident Evil*. Seeing it for the first time, I just thought how amazing and polished it looked, so even though it was before the game came out, that was my very first memory of the series."

Despite impressing their colleagues, the *Resident Evil* team wasn't convinced that the game would do well, with the game pencilled in for sales of around 200,000. If the game had any major weakness other than an unproven market for horror games, it was the

THE ORIGINS OF SURVIVAL HORROR

Capcom's game certainly refined the genre, but wasn't necessarily the first game to introduce the genre's key tropes...



» The movie series, while based on the games, has carved a narrative for itself, setting itself apart from its source material.

game's incorporation of human actors. The opening video sequence and overall voice acting carried a heavy B-movie flavour, with some toe-curling dialogue delivered with enough ham to stock the nation's deli counters twice over. It ultimately didn't matter – critical acclaim was widespread and the game went on to sell 2.75 million copies, making it the company's biggest hit since *Street Fighter II*. The game would achieve further success on the PC and Saturn, before being updated on PlayStation in a *Director's Cut* release and a further DualShock-enabled release that achieved over 2.3 million sales combined.

"So there weren't really many horror games back then, so this was maybe the very first game that you could say was truly scary," says Kawata, explaining

the success of the game. "But it also combined these horror features with good, deep, entertaining gameplay and on top of that the game used the then cutting-edge capabilities of the PlayStation to the fullest. So it wasn't a title that had one gimmick and the other features were falling by the wayside – it really hit all those marks so successfully with horror, gameplay and technological prowess. That was such a great combination which made a perfect storm for capturing the minds of gamers back in 1996."

Resident Evil's sales were great enough that Capcom immediately moved into full production of a series, adding new variations on the original theme. *Resident Evil 2* attempted to inject a further sense of vulnerability into proceedings, casting you as a

HOUSE OF HORRORS

As one of the most iconic locations in videogames, the Spencer Mansion holds some truly memorable moments...



MEDICAL ROOM

■ This room is a safe one – in fact, it's so safe that this is where you'll meet Bravo Team survivor Rebecca Chambers, if you're playing as Chris. She's a key ally in your fight against the biological horrors you face in the mansion.

CEILING ROOM

■ You can grab a shotgun in the room next door to this one. However, you can't just pluck it off the wall – unless you replace it with a broken shotgun, this room's ceiling trap will activate. Don't become a Jill Sandwich...



REMEMBER TO
BRING SOME
WEED KILLER



L-SHAPED HALLWAY

■ There doesn't seem to be too much going on in this quiet corridor. But as you walk down it, ferocious hell hounds come crashing through the windows, eager for a bite of Redfield rump or Valentine thigh!

WHO LET THE
DOGS OUT@



TEA ROOM

■ Here's where you first meet one of the mansion's inhabitants, who appears to be tending to one of your fallen comrades. Oh, never mind – he's feasting on the poor victim's innards. Get your weapon ready!

I HOPE THIS
ISN'T CHRIS'
BLOOD



KEEPER'S BEDROOM

■ The groundskeeper used to live here, but now he's undead, and he will ambush you from the wardrobe as you read his diary! Of course, the real horror comes when you get to read his account of zombification. Itchy. Tasty.

DON'T OPEN THAT DOOR!
YOU'RE A FOOL IF YOU
DARE!



ATTIC

■ We've seen some horrifying things in attics – water-damaged games, dead pigeons, you name it – but we've never come across a gigantic snake. This creature, known as Yawn, serves as the first boss of the game.

SNAKES, WHY DID
IT HAVE TO BE
SNAKES...

TAXIDERM
ROOM

LIBRARY

FIRST FLOOR

MAIN HALL

SMALL
LIBRARY

BEDROOM

ARMOUR ROOM

ATTIC

REMEMBER:
EYE OF
THE TIGER

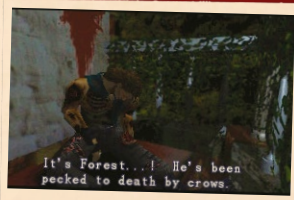
DINING ROOM BALCONY

■ This balcony seems safe from below. When you actually arrive there, though, you'll find zombies ready and waiting for you. If you push the statue here onto the floor below, you'll find a blue gem that's crucial to solving a tiger statue puzzle!



BALCONY

■ Here's where you'll find the corpse of Bravo Team's Forest Speyer, pecked to death by crows. His discovery is just a grisly moment in the original game, but in every version since then, he'll revive as a zombie and attempt to attack you.

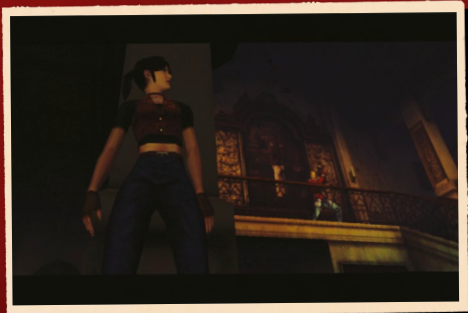




► rookie cop (Leon Kennedy) or college student (Claire Redfield) in the virus-infested Raccoon City with no obvious support. Additionally, the game took place across two different scenarios and your actions in one could affect your play with the other character – for example, if Claire grabs the submachine gun in her A scenario, Leon won't be able to take it when he visits the same room in his B scenario. Despite a troubled production in which the whole project was restarted late in development, the game shifted 4.96 million copies when released in 1998, and is arguably the most beloved of the classic games.

By this point, *Resident Evil* had effectively popularised survival horror games and other developers were keen to jump on the bandwagon. Indeed, the dominance of *Resident Evil* "was hugely problematic for the development of the genre moving forward", according to Sam. Early efforts had their own style, but the market soon shifted towards outright clones – the 1998 Saturn game *Deep Fear* is effectively *Resident Evil* underwater, and *Countdown: Vampires* is *Resident Evil* but with (you guessed it) vampires. Of the earlier efforts, *Clock Tower* retains a cult appeal due to its 16-bit heritage and point-and-click gameplay, and Squaresoft's *Parasite Eve* successfully blended survival horror with action-RPG mechanics.

1999 proved to be the year in which competition within the genre really heated up. While the fully-3D Dreamcast game *Blue Stinger* wouldn't provide much to worry Capcom, Konami's PlayStation game *Silent Hill* was much more successful in adopting real-time 3D graphics. The psychological horror of the game was a marked departure from the B-movie themes of other games, *Resident Evil* included, and the game was well-received and successful, kicking off a long-running



» *Resident Evil: Code Veronica* shifted the series to full-3D environments for the first time ever.



» Though dark, *Resident Evil*'s remade visuals were astonishing – little polish was needed to put them on modern consoles.

"THERE WEREN'T MANY HORROR GAMES BACK THEN, SO THIS WAS MAYBE THE FIRST GAME THAT YOU COULD SAY WAS TRULY SCARY"

Masachika Kawata

series. Capcom was also taking a bite out of its own market with another real-time 3D survival horror, *Dino Crisis*. The initial game stayed close to the *Resident Evil* formula but provided some terrifyingly quick enemies, allowing the protagonist more mobility to compensate. The game sold over 2 million copies and spawned a series of its own, though the sequels were more regular action games.

Capcom wasn't content to leave the market to pretenders, though, and developed the next two games in the *Resident Evil* series in tandem. The final entry in the original PlayStation trilogy was 1999's *Resident Evil 3*, featuring Jill Valentine's turn to escape from the doomed Raccoon City. This time, the twist was the addition of a smart and persistent enemy named Nemesis, which hunts you down over the course of the game. Capcom also tweaked the movement controls a little in order to better accommodate increased levels of action, adding a 180-degree turn move for quick escapes. Despite a shorter story and no option to choose between protagonists, the game was another critical and commercial success, shifting 3.5 million copies.

On the Dreamcast, *Resident Evil: Code Veronica* teamed up Claire Redfield, her brother Chris and prisoner Steve Burnside in an attempt to escape from the Umbrella-controlled Rockfort Island. For the first time in the series, environments were rendered



» The 2002 remake of *Resident Evil* added new enemies, wrong-footing even series veterans.

in real-time, allowing for some camera movement (although this was still predetermined) and the addition of first-person firing for some weapons. Between its Dreamcast debut in 2000 and the PS2 conversion in 2001, the game sold over 2.5 million copies.

The last two classic *Resident Evil* adventures were released for the GameCube, the platform Capcom had already chosen for *Resident Evil 4*, as part of plans to consolidate the whole series onto a single platform. The first of these was a modern remake of the original *Resident Evil*, created because the team believed that the game's visuals and localisation had aged poorly. The results were stunning – as well as a visual upgrade, the game kept series veterans on their toes with areas that had been cut from the original ►

BACK TO BASICS

How Resident Evil VII is looking to the franchise's past to reshape its future



MANSION OF MADNESS

■ The vast majority of *Resident Evil VII* takes place in an old plantation mansion, which belongs to the Baker family. It's extremely similar to the original Spencer Mansion, with lots of locked rooms to access via unique keys. It effortlessly captures the same white knuckle tension that gamers experienced in 1996.



SIMPLE, BUT EFFECTIVE PUZZLES

■ *Resident Evil VII* will test your brain as well as your reflexes as it features plenty of effective puzzles to solve as you make your way deeper into the mansion. A videotape being used to ingenious effect to show a hidden room in the building is just one example of the clever puzzles that lie in store for you in the final game.



EXPLORING THE UNKNOWN

■ *Resident Evil* was just as much about exploring your surroundings as it was avoiding its denizens. Amazingly, Capcom has been able to maintain that balance for *Resident Evil VII* – enabling you to examine various objects in your inventory and vicinity. The scripted text does a good job of describing your creepy surroundings.



AN UNSTOPPABLE FORCE

■ The Nemesis was a truly unstoppable force of nature from Capcom's third *Resident Evil* game, which would turn up at inopportune moments and wreak havoc on the poor player. Capcom mirrors this in *Resident Evil VII*, but it's now members of the Baker family who continually show up to terrorise you.

► game, as well as the introduction of the dangerous Crimson Head zombies that mutated from any regular zombies killed early in the game. Despite the high quality, sales of 1.35 million was a disappointment.

Resident Evil Zero was originally announced for the N64, but moved to the Gamecube due to development issues resulting from the older console's memory limitations. This prequel followed Rebecca Chambers of the original game and escaped convict Billy Coen as they attempted to survive an outbreak of T-Virus infected leeches unleashed by the creator of the virus, James Marcus. The game implemented a new "partner zapping" system, allowing the player to switch between the dual protagonists at will. *Resident Evil Zero* launched in 2003 and retained the amazing visual quality of the GameCube *Resident Evil* remake, but also achieved a similarly-disappointing 1.25 million sales due to the Nintendo platform's weak adoption and the general feeling that *Resident Evil Zero* was ultimately more of the same from the genre.

By this point, even series that predated *Resident Evil* had adopted its conventions – 2001's *Alone In The Dark: The New Nightmare* and 2002's *Clock Tower 3* were now closer to Capcom's series than their own origins.

"THE RESIDENT EVIL GAMES WERE ARTFULLY-CONSTRUCTED PUZZLE BOXES"

Sam Barlow

Capcom was aware that the series was in need of revitalisation, if not the entire genre. Despite the ongoing success of *Resident Evil*, the company spared no effort to make sure that *Resident Evil 4* would achieve that, scrapping multiple attempts before hitting upon a radical revision of the formula that ditched the zombies and Raccoon City for a more action-oriented style of game set in rural Spain. The game was an enormous critical and commercial success, but one which moved far away from the original survival horror template. The game created a legacy all of its own, one which further *Resident Evil* sequels have followed.

But while *Resident Evil* left survival horror behind, appetite for the genre remained. It fell to a different generation of developers to drive the genre forward, and each has had a different approach. For Sam, *Silent Hill* has differentiated itself through tone. "*Silent Hill* games are never about the mechanics, whereas the classic *Resident Evil* games were artfully-constructed puzzle boxes," he notes. "*Silent Hill* games are messy and should lack resolution – they should plant themselves in your head and never let go. Whereas a *Resident Evil* game is something you can solve and win. The characters in *Resident Evil* are ciphers and fantasy costumes, whereas the people in *Silent Hill* are real and it's their stories that are the point of the whole thing." Additionally, the team at Climax was deliberately trying to break the mould. "We tried – as best we could – to try and tear up the rule book with *Shattered Memories* and were, perhaps not explicitly, but at least implicitly trying to *not* incorporate elements from *Resident Evil*," Sam recalls. "It felt wrong that such a specific template had become the dominant form for horror games."

That motivation to move away from the norm also drove the *Dead Space* series. "Glen Schofield



» Who would have thought that a full bath would be hiding an ugly zombie? Stab it in the head before it can pull you in.



FEELING LIMITED

■ The limited ammo found in the earlier games meant that every shot counted. Fleeing over fighting was always recommended in most scenarios, and ensured you had a good chance of surviving encounters. We've been terrified to discover that ammo has, once again, become a precious commodity.



THRILLS AND SPILLS

■ The original *Resident Evil* was famed for its 'shit your pants' moments, whether it was getting scared from dogs jumping through windows or being terrorised by cantankerous crows. True to form, *Resident Evil VII* is offering similar jump scares, more so if you're brave (or silly) enough to play it in virtual reality.



JUGGLING INVENTORY

■ Jill Valentine and Chris Redfield were constantly juggling items in the first game due to their limited carrying capacities. A similar system is employed in *Resident Evil VII*, so don't assume you can simply walk around the Bakers' mansion and fill your boots with goodies. You'll just end up disappointed.



» *Resident Evil Zero* was good, but formulaic, highlighting the need for Capcom to rethink its own approach to horror.



» *Resident Evil Zero's* train makes perfect sense as an infection site – lots of people and nowhere to run.

really wanted to prove that his team was capable of succeeding at doing something risky at a company that hated taking risks," Wright recalls. "The goal was to make a game that didn't have to root you in place when shooting to make combat elicit panic and fear, so I think that the game felt a bit more familiar to those who play shooters," he continues. "The team did an incredible job at that. There were sceptics that thought it couldn't be done, and it was one of those great moments when it felt so good to prove old assumptions wrong." Not only did *Dead Space* become one of the most highly-acclaimed horror games of the generation, it spawned successful sequels and spin-offs, making its own mark.

However, for a designer further removed from the influence of the original games, avoiding comparison with a titan of the genre is not so much of a concern. "While *RE* was really influential, I am not sure I see there being any issues with escaping its shadow. There are so many simple things that one can do to be different," Thomas asserts. "If you keep the things that drive the game at a holistic level, such as the mixture of action and puzzles, or how encounters are setup, I do not think that many people will feel it is too *Resident Evil*-like."

It's now Capcom that is looking back to the early *Resident Evil* era for inspiration. "It's hard to work on a series in Japan because there's so much expectation that builds up over time, but you also have these big turning points where you realise that you have to make a change in order to make the series continue," notes Kawata, who believes that *Resident Evil VII* will be one of those major turning points. "The big change from recent entries is definitely that we're taking it away from the action that was becoming prominent with the later games and re-establishing a focus on fear as a key concept of the game." Indeed, like some kind of biological mutation, *Resident Evil* is now feeding off the imitators it spawned – the first-person perspective that has become common in other horror games is now a key part of *Resident Evil VII*, as is VR technology.

Ultimately, the horror of *Resident Evil* and its successors comes down to you – it's your reaction that matters. "Horror works best when you can empathise

with the characters. The key is that you have to relate to them, and they have to be experiencing resource constraints that make them feel out of control," says Wright. This is something that Kawata also believes, and has tried to convey in the latest *Resident Evil*. "Something that can obstruct the player's ability to feel fear for the characters [is] if they feel they can handle the situation, but now you are an ordinary person in an extraordinary situation and it's not a given that they're going to be able to get through this in one piece."

So remember: when you're in an eerie corridor where you're sure that something is lurking in the shadows, you're in desperate need of healing and you're stuck with only a practically useless knife to fight off enemies, it doesn't matter how you're viewing the action or whether you're fighting aliens, dinosaurs or even zombies. What matters is that you're scared – and *Resident Evil* provided decades of inspiration for just those sorts of scares. ✱



THE HISTORY OF...



STAR

ROGUE SC

Everyone wants to be a pilot after watching Star Wars, and Factor 5 and LucasArts delivered the next best thing with their series tie-ins. Nick Thorpe is your copilot on this mission to find out how they were made...

With all the excitement over the revitalisation of *Star Wars* under Disney's ownership, it's easy to forget that the latter half of the Nineties

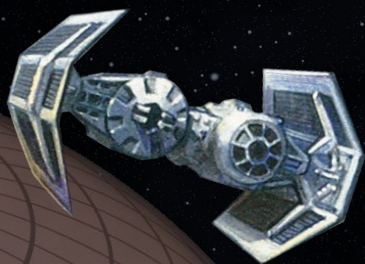
was a magical time to be a *Star Wars* fan. The original trilogy was remastered to unanimous acclaim and absolutely no controversy whatsoever, and production was underway on the first film in the beloved prequel trilogy, *Star Wars Episode I: The Phantom Menace* – a film which would finally satisfy fans' desires for intergalactic trade negotiations and buffoonish CGI mascots. [You're really selling your argument here, Nick – Ed.]

Fine, you got us – the late Nineties gave us some of the most extraordinarily divisive *Star Wars* media. However, while it's easy to criticise the finished products in hindsight, the simple fact that a new *Star Wars* film was

on the way did create a buzz around the series for the first time in years. What's more, if you ignore the films' and focus on videogames, *Star Wars* was still delivering the goods. The likes of *Dark Forces* and the *X-wing* series were hits, and even the misses had some merit. *Rogue Squadron* definitely became one of the hits. However, it was a non-*Star Wars* LucasArts game that planted the seed of what would eventually become *Rogue Squadron*.

"We had been fascinated by real-time landscape 3D engines since the classic Atari 8-bit computer game *Rescue On Fractalus* in the early Eighties," explains Julian Eggebrecht, cofounder of Factor 5. In fact, the two companies had made some headway on a sequel called *Return To Fractalus* for the Amiga in the late Eighties, before deciding that the hardware couldn't sufficiently advance the concept. "By 1994 it was clear that the first generation of consoles made for 3D would have the right mix of technology to attempt the game again, and we signed yet another contract with LucasArts for *Return to Fractalus*," Julian continues. "As fate would have it, right around that time they signed a three-game exclusivity deal for *Star Wars* games on the shiny new Nintendo 64. We had been begging them for a while to give us creative access to *Star Wars*, so then-president Jack Sorensen decided to finally give in and granted my wish to turn our *Fractalus* project into a *Star Wars* game."

More inspiration was provided by *Shadows Of The Empire*, a Nintendo 64 launch title which wasn't consistent enough to be a true classic, but had some very impressive high points. "The Hoth snowspeeder level on *Shadows Of The Empire* was recognised widely as one of the most fun, playable portions of that game. The



» Although the default was a third-person view, this cockpit view put you at the heart of the action.

STAR WARS ROGUE SQUADRON™



» Missions sometimes require you to escort a friendly, often less well-armed craft.

initial pitch was to take that, and expand on it," explains LucasArts alumnus Ryan Kaufman. As a basis for the game, this was an instant differentiating factor from the existing *Star Wars* combat flight games. "Making an *X-wing* game for console was never even under consideration," Ryan confirms. "The *X-wing* franchise was doing quite well on PC. I think they wisely decided to make *Rogue Squadron* more approachable, for a console audience used to a different kind of gameplay."

The two companies split the burden, each handling different aspects of the game. "Factor 5 made the engine, worked closely with Nintendo to maximise usage of the N64, they wrote the music; they were the genesis of the idea," explains Ryan. "LucasArts were close partners with them, helping flesh out the actual content, and making sure it was true to the *Star Wars* universe." This would be the role that Ryan would play during development. "I was a level designer at that point, and I'd worked on *Outlaws* and *Jedi Knight*," he continues. "I didn't know much about flight-action games, but I knew how to make a level that felt like a story unfolding."

"My pitch was to make *Rogue Squadron* a greatest-of-the-movies, free-roaming action game, but Lucasfilm licensing granted only part of it," recalls Julian. "What they didn't allow was to mix original content with battles from the movies – we had to stay original in our

ROGUES GALLERY



JULIAN EGGBRECHT
Producer, *Rogue Squadron*
Director, *Rogue Leader* and
Rebel Strike



MIKE KEITH
Software engineer, *Rogue*
Leader and *Rebel Strike*



RYAN KAUFMAN
Level designer/writer,
Rogue Squadron



CHRIS CRAWFORD
Mission design director,
Rogue Leader and
Rebel Strike



JAMIE UHRMACHER
Mission design director,
Rogue Leader and *Rebel Strike*



► story.” The plan to fulfil this goal was to instead adapt other *Star Wars* media—specifically, the *X-wing* novels. “Initially, Mark Haigh-Hutchinson had culled a bunch of interesting *Rogue Squadron* missions from the novels. You were going to play as a member of Rogue Squadron, post-*Return Of The Jedi*, and follow those missions,” explains Ryan. “That’s why the Mon Calamari mission is in there. If I remember correctly, it’s a scenario that happened in one of the books or comics.”

However, retelling the Extended Universe stories soon took a back seat to a more commercially appealing approach, which allowed the game to fill in the blanks between films, as Ryan recalls. “When Kevin Schmitt (lead level designer) and I came on, we pressured Mark to make Luke Skywalker the main character, and set the missions mostly between *A New Hope* and *Empire Strikes Back*. He went for it!” It was an approach that wouldn’t have been feasible in years past, but by the N64-era consoles had the power to deliver immersive *Star Wars* experiences on par with other media – instead of being simple tie-in products, they could become part of the *Star Wars* story in their own right.



» The only major graphical compromise in *Rogue Squadron* is the use of distance fog.

With the setting firmly in place, the feel of the game had to be nailed down. “Our basic design for *Rogue Squadron* flowed very naturally from my main inspiration for how a 3D *Star Wars* game should feel, and that was the 1983 vector arcade, *Star Wars* game from Atari,” explains Julian. “I wanted to merge the free-roaming intuitive gameplay of *Rescue On Fractalus* with the guided, on rails, crazy visceral movie-like feeling of Atari’s *Star Wars*.” However, this proved to be a difficult task for the programming team. “Initially, making the flight control feel really good was a difficult thing to get right. There’s actually a huge amount of difference between designing a snowspeeder and designing an X-wing,” Ryan remembers. “That caused Mark Haigh-Hutchinson a lot of grief, getting that just right. He’d often work all day and bring us a build to test, hoping he’d finally nailed it – and we’d shake our heads, ‘Sorry, buddy, not quite.’ But he kept at it, kept having creative breakthroughs and eventually, made something pretty special.”

That wasn’t the only challenge that the teams struggled with. While the N64 had no problem displaying 3D graphics, programming 3D movement was a different matter. “The other big problem was the enemy AI – they couldn’t fly on their own. It was too processor-intensive to calculate flight paths on the fly, so we had to create splines the TIEs and other flying enemies could follow,” remarks Ryan. “Believe it or not, most of the flying enemies were generated and followed strict spline paths. Only a few were free-flying enemies. And funny enough those were not very fun to fight! As level designers, used to creating scenarios where the enemies had robust AI, we had to adjust how we designed combat.”

Late in development, another problem reared its head – the teams hadn’t actually been developing the game for a standard N64 console. “We had made the mistake of developing the game with the memory expansion in

“We got the okay to secretly include the Naboo Starfighter”

Julian Eggebrecht

place at all times, and not limiting access for the artists to that memory. When the time came to ship the product, we feared we might not be able to bring it back into the four megabytes that a normal N64 had,” Julian admits.

Facing the possibility of having developed a game that was beyond the console’s capabilities, LucasArts and Factor 5 tried two simultaneous solutions. “While also desperately working on compression techniques, we made the pitch to Nintendo to turn a problem into a win, by releasing the hardware expansion. They hadn’t planned for it since it always was meant to be a part of the 64DD add-on drive, but not a standalone product.” Fortunately for the *Rogue Squadron* staff, they had help from an unexpected external source. “We were lucky that Acclaim’s *Turok 2* team ran into the same memory problems and also pitched Nintendo this idea for that very same Christmas period. That gave enough weight to it, and finally they relented.” In the end, the team did manage to fit *Rogue Squadron* into a standard N64, but owners of the Expansion Pak got an improved experience in the form of a high-resolution mode.

Despite the challenges, Ryan remembers that his colleagues from the other team found time to have fun. “The Factor 5 guys were classic console game programmers and designers. To them including unlockables... that was just what you *did*. You owed it to your fans!” Of course, once the LucasArts team realised that the game was going to have such secrets,

ENTER THE HANGAR

Here are some of the many iconic *Star Wars* vehicles you can pilot in the *Rogue Squadron* series...



X-WING
ROGUE SQUADRON/ROGUE
LEADER/REBEL STRIKE



A-WING
ROGUE SQUADRON/ROGUE
LEADER/REBEL STRIKE



MILLENNIUM FALCON
ROGUE SQUADRON/ROGUE LEADER/
REBEL STRIKE



SLAVE 1
ROGUE LEADER/REBEL STRIKE



**JEDI
STARFIGHTER**
REBEL STRIKE



B-WING
ROGUE LEADER/REBEL STRIKE



Y-WING
ROGUE SQUADRON/ROGUE
LEADER/REBEL STRIKE

T-47 AIRSPEEDER
ROGUE SQUADRON/ROGUE
LEADER/REBEL STRIKE



» Protecting the gas platforms at Bespin requires some tricky attacks on this Imperial gun platform.

they couldn't help but get in on the fun. "We got into that too," Ryan confirms. "I created the Beggar's Canyon level and the bonus Hoth level. And Jeff Kung developed the Death Star level – kind of fulfilling a childhood dream!" However, one secret stands above all the others. "To top it off, late in the production cycle we did get the okay to secretly include the Naboo Starfighter as a deeply-hidden unlockable, and managed to keep that a secret until the movie came out," Julian proudly explains.

When *Star Wars: Rogue Squadron* was released for N64 and PC in December 1998, it was a critical success. The combination of free-roaming flight and intuitive controls made the game's missions a joy to play, and with a variety of missions ranging from protecting friendly targets to search-and-destroy outings, there was plenty to do. What's more, it was technically stunning – few N64 games could compare graphically. Commercial

What was it like working on such high-profile games?

Rogue Leader was the first game I worked on. It was an incredibly exciting, exhausting and memorable experience. We were a small team and hungry to prove ourselves. The team really bonded under that competitive spirit to create the best GameCube launch title. The positive reaction to the 'Space World' debut certainly energised us. I'm incredibly grateful to have started my game development career on that project with that team.

What additional benefits did working on the GameCube provide?

The GameCube certainly provided increased graphical horsepower to recreate the most realistic *Star Wars* visuals to date. That realism is in no small part due to the tireless work of Factor 5's engineers and artists. They used every trick in the book to push the GameCube hardware to its limits.

We've heard *Rebel Strike's* development was quite difficult, why was this?

Rebel Strike's development had its fair share of difficulties, but paled compared to the learning curve, high expectations and compressed schedule of *Rogue Leader*. Most of the difficulties were related to the character sections. First, the flight engine had to be expanded to support portal and sector technology for the interior environments. The aging tools struggled to support this additional tech. When the underlying character mode design wasn't panning out, the flawed tools and tech workflow made iteration difficult and slow, ultimately hampering the ability to course-correct.

Why were the third-person sections added?

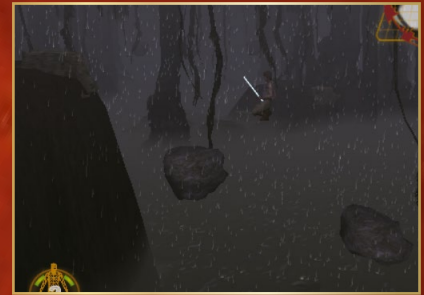
We didn't want to just make *'Rogue Leader: More Missions'*. The team felt a good game sequel should be one third the same, one third improved and one third new. The new third was the character sections. Also, the previous games may have left players only connecting with the craft, not the pilot. So character sections attempted to support that fantasy fulfilment of being Luke, Han and Leia.

How do you feel they hold up today?

The character sections were the weakest part of the game when it was released. They haven't stood the test of time, especially considering the emergence

Q&A: JAMIE UHRMACHER

The mission design director provides further insight into *Rogue Leader* and *Rebel Strike*



» Negative criticism of *Rebel Strike* was squarely aimed at the on-foot, third-person levels.

of third-person cover shooter genre conventions following *Gears Of War*. Also character models and animations tend to age worse compared to vehicle and environment art.

What was the hardest thing to solve from a gameplay point of view?

We underestimated the learning curve for creating a best-in-class, third-person, character-based shooter. Much of the team possessed little genre experience and picked the wrong games to emulate. Early versions looked to *Robotron* for inspiration, which requires a locked overhead camera and hordes of enemies. The locked overhead camera didn't provide the cinematic feel of *Star Wars*. And slaughtering a hundred Stormtroopers felt tonally wrong. *Devil May Cry* was another inspiration for its tight controls, intimate combat and cinematic feel. However, it was a melee game at heart.

Why was the ability to play *Rogue Leader* missions in multiplayer added?

If a third of a good sequel is improvements upon the original, then I think the third improved was the *Rogue Leader* co-op campaign. These missions benefited from an additional player, design hindsight, new AI tech and improved visuals.

Why do you think the series remains so popular with gamers?

Dogfighting is a core *Star Wars* fantasy. And *Rogue Squadron* focused on accessible, arcade dogfighting with movie-quality visuals. It's easy to pick up and play, but difficult to master. *Star Wars* vehicles don't suffer from the same sort of uncanny valley that characters do, so they hold up visually today.

TIE INTERCEPTOR ROGUE SQUADRON ROGUE LEADER/REBEL STRIKE



TIE FIGHTER ROGUE SQUADRON ROGUE LEADER/REBEL STRIKE



TIE BOMBER REBEL STRIKE



TIE HUNTER REBEL STRIKE



ENEMY LINES

Here's a selection of the most memorable conflicts from across the Rogue Squadron series...

HOTH



ENDOR



MYGEETO



MUSTAFAR



BESPIN



DEATH
STAR



OUTER BORDER
MID RIM

EXPANSION REGION
INNER RIM

CORUSCANT



COLONIES

CORE WORLDS

INNER CLUSTER

ALDERAAN



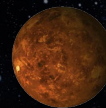
CORELLIA



KASHYK



KILE II



NABOO



DAGOBAH



KOTHLIS



TATOOINE



KAMINO



GEONOSIS



DEATH STAR ATTACK

ROGUE LEADER

■ Here's an opening mission that makes an incredible first impression – flying over the surface of the Death Star in your X-wing, you take out towers and TIE Fighters before descending into that famous trench for the ultimate wish fulfillment.



DEFECTION AT CORELLIA

ROGUE SQUADRON

■ This mission sees you defending a city from marauding TIE Bombers, in one of the most graphically impressive scenes in the game. Han Solo also drops by in the Millennium Falcon in order to lend you a hand, since it's his home under attack.



SPEEDER BIKE PURSUIT

REBEL STRIKE

■ The Speeder chase was one of the best things about *Return Of The Jedi*, and it's no surprise that it's great in videogame form too. While you're dodging trees and blasting Stormtroopers, just think how far gaming has come since *Deathchase*!



ATTACK ON KILE II

ROGUE SQUADRON

■ After lots of defence and rescue, this mission finally lets the Rebel Alliance's finest cut loose and perform some search and destroy gunning. Narrow canyons make this a treacherous but thrilling environment to fight in.



VENGEANCE ON KOTHLIS

ROGUE LEADER

■ This mission sees you finishing off a Star Destroyer – first by taking out the support from TIE fighters and then by bringing down some marauding AT-AT's with your trusty tow rope.

“The game was completely built around the hardware”

Julian Eggebrecht

► success followed, to a degree the team hadn't expected. “We hit right in the middle of the rerelease still being in people's minds, and everyone being excited about *Episode I*,” Julian explains. “The game ended up being the most successful *Star Wars* game for years.”

Plans were quickly set in motion for a sequel, with LucasArts abandoning the original plan for *Rogue Squadron*'s sequels to be based on the new prequel trilogy. “After the success of *Rogue Squadron*, LucasArts gave us carte blanche to try anything and everything that we wanted to do,” says Julian. LucasArts weren't the only ones that had noticed the game's success, either. “Nintendo contacted us and invited us to the GameCube hardware design team after they saw and more importantly, heard what we did with *Rogue Squadron* on the N64,” he continues. “Our technology lead, Thomas Engel, knew every bit of the chipset inside out and was able to use the visual and performance side of the next *Rogue Squadron* as a case study for the hardware. The game was completely built around that hardware, and some of the hardware around the game.”

That might sound like a luxurious arrangement, but *Rogue Squadron II: Rogue Leader* was a game developed with some major constraints. The improvement wish list was long and time was short. “Frame-rate, detail, controls, music, sound effects, you name it we wanted it. And, of course, I finally wanted to realise my original pitch to recreate the actual movie scenes, and nicely weave in and out of original versus movie material,” explains Julian. “*Rogue Leader* was tailored around those wishes and the very brief development time of nine months. We cherry-picked what was possible to be done well in that timeframe.” Former Factor 5 developer Chris Crawford joined during the game's development and still remembers the pressure. “It was a launch title and we didn't have much time,” he confirms. “We knew it was



» The constant fire in battle scenes is impossible to depict accurately in still shots.

important for the platform and critical for us as a studio to deliver something great and on time, and I think every person in the studio had self-imposed pressure to make the best *Star Wars* game we could.”

Despite this compressed development schedule, the combination of strong technology and people who knew it well proved potent, as *Rogue Leader* was a visually stunning game. “The GameCube tends to not get the respect it deserves from a technical point of view. It was a powerful machine and fantastic to develop for,” says Mike Keith, formerly of Factor 5. “I remember one day crowding around in Holger [Schmidt]'s office to watch the Yavin flyby cutscene – the first sequence that we got up and running. It was amazing. The hairs on the back of my neck stood up and I actually got misty eyed.”

How was this achieved? “One of the unique bits that made the game look so good is that Thomas and I had been focused on cinematic real-time shaders even in the late N64 days and we knew exactly what we needed to bring the look of *Star Wars* perfectly alive,” Julian explains. “Other teams were years away from using normal mapping, or real-time shadows, etc., things that *Rogue Leader* all had. The craziest ahead-of-its-time bit is that we managed to do full global illumination on the GameCube, something that didn't appear anywhere else until a full console generation later with open-world games.”

Chris was also impressed with the extra power of the GameCube. “Visually we could do some very impressive cross-faded level of detail switches for massive objects like the Star Destroyers as well as smaller objects like fighters,” he explains. “Early on the team built a Star Destroyer that looked great both from a distance and up-close, running at high FPS on the prototype hardware. I was blown away by what the tech could do. We were also able to not only render more enemies at once, but the enemies were able to have more sophisticated



» *Rogue Leader* allowed you to take part in some of the most famous scenes from the movies.

behaviours,” he continues. “The TIE Fighters in *Rogue Squadron* were more or less locked onto their paths. On the GameCube we were able to give enemies AI that let them chase the player and fly in different formations. The same AI was used to let players direct their wingmen to form up or attack various targets. This might have been possible in previous generations, but not on the scale or at the frame-rate that the GameCube allowed.”

The additional power did create new challenges in terms of game design, particularly because of the expanded environments. “It's very easy for players to get lost, especially in space, and we worked hard on systems that assisted them to minimise that. Back then mainstream console players still struggled with 3D,” explains Mike. “Finding non-frustrating ways to direct players to objectives was sometimes tricky, as well as keeping people oriented in the space levels,” Chris concurs. “We always tried to provide clear visual landmarks so players wouldn't have to rely too much on the HUD. For example in Ison Corridor Ambush mission, the level took place inside a giant tunnel of nebula clouds and followed a large convoy of ships. This made it easier for players to identify ‘forward’ and ‘back’ and keep their bearings. Plus it just looked cool.”

Additionally, even though CPU power allowed for enemies to have more autonomy, this still didn't make for fun gameplay, as Chris explains. “Getting the



» *Rogue Leader* was the first time we'd ever agreed with claims of ‘movie-quality’ real-time graphics.

SECRETS OF THE JEDI

Each of the three Rogue Squadron games was packed with loads of cool secrets, each of which could be accessed via the Passcodes section of the Options menu. Here are five of our favourites...



NABOO STARFIGHTER

STAR WARS: ROGUE SQUADRON
■ Perhaps the best-kept secret of any N64 game, as it wasn't discovered for months. To get this *Episode I* craft, enter HALIFAX? Followed by !YNGWIE!, then start the game on a non-Snowspeeder mission. You'll find the Naboo Starfighter to the left of the X-wing on the ship selection screen.

DEATH STAR TRENCH

STAR WARS: ROGUE SQUADRON

■ WOISTHAN unlocks this movie mission. "Jeff Kung discovered that the topographic height maps we used to create levels, couldn't be bigger than a certain size," Ryan reveals. "He didn't have enough room to really lay out a long trench, like we saw in the movies. So he had to add corners!"



AT-ST MISSION

STAR WARS: ROGUE SQUADRON

■ "The one thing I remember wanting, and bugging the F5 guys to put in, was a playable AT-ST scout walker," Ryan recalls. "They told me a million times, 'No way, we can't possibly include that.' And of course, being old school coders, they then *had* to put it in as a secret." CHICKEN unlocks this.

THE BUICK

ALL THREE!

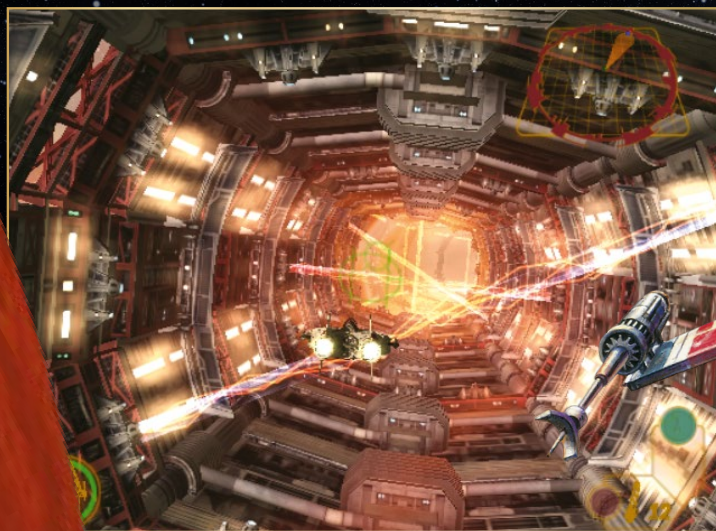
■ For some bizarre reason, sound designer Rudolf Stember's Buick Electra 225 became a recurring secret in the *Rogue Squadron* series. KOELSCH unlocks it in *Rogue Squadron*, !ZUVIEL! then !BENZINI! does the job in *Rogue Leader*, and AXCBPRHK followed by WHATTHE? works for *Rebel Strike*.



CLASSIC ARCADE GAMES

STAR WARS ROGUE SQUADRON III: REBEL STRIKE

■ All three of Atari's arcade games are present in *Rebel Strike*, allowing you to indulge in retro vector fun. To unlock *Star Wars*, enter RTJPF!G then TIMEWARP. *Empire* unlocks with HIF?HXS then KOOLSTUF, and *Jedi* with !?ATHIRD then GAME?YES.



» Missions didn't just test your skill as a gunner, but your agility as a pilot.

► dogfights to be fun and not too overwhelming was a challenge too. Although we had new AI tools to play with. A good deal of time was spent crafting paths for enemies and managing when they used the paths and when the AI was set free to attack."

Incredibly, the teams at LucasArts were working on the similar game *Star Wars: Starfighter* but weren't aware of *Rogue Leader*'s development. When they did learn of it, the resulting friction put the entire *Rogue Leader* project in jeopardy, as Julian recalls. "When the legendary teaser trailer at the GameCube unveiling was played, most people at LucasArts were in shock," he explains. "They tried to have *Rogue Leader* killed to prevent the game from overshadowing *Starfighter*, and almost succeeded due to Microsoft offering LucasArts incentives to move *Rogue Leader* to the Xbox. It was a nasty four months of political wrangling with us at Factor 5, as Nintendo technology partner, caught in the middle."

Thankfully, the game survived and the high-pressure development produced a diamond of a game. Thanks to its astonishing visuals, focussed game design and excellent recreation of key movie scenes, *Rogue Leader* is the undisputed high point of the trilogy. Upon its launch in November 2001, it received universal critical acclaim and became the best-selling third-party game of the GameCube's launch lineup. When the GameCube launched in the UK the following May, *Rogue Leader* actually became the first ever third-party game to hit the top of the UK charts during a console launch.



» The prospect of playing as Luke Skywalker on the frontlines of Hoth was tantalising for any *Star Wars* fan.



» Co-op mode was definitely one of the highlights of the otherwise underwhelming *Rebel Strike*.

“We just wanted to capture the excitement we felt as kids”

Chris Crawford

With the same team working on the same platform, but with the benefit of additional experience, *Rogue Squadron III: Rebel Strike* should have been an instant classic. On paper, it has all of the ingredients to be considered the high point of the series, yet it's more often noted as the black sheep. “With *Rebel Strike* we bit off way too much,” Mike laments. “We were looking at about 18 months development time and thinking: ‘Given how little time we had for *Rogue Leader*, think how much new stuff we can cram in!’ Burn out was also a factor. The company was going through growing pains too.”

Though *Rebel Strike* included the same action that had been so great in the previous games, it introduced on-foot sections which allowed the player to control heroes directly. “The weak spots in the game are the on-foot missions. That clearly was a mistake, but then there is also a slight feeling of ‘leftovers’ in *Rebel Strike* since *Rogue Leader* really grabbed some of the key levels,” says Julian. The idea of doing on-foot gameplay seems sound – what went wrong? “We hadn’t done that gameplay before and we struggled,” says Mike. “When you’re trying something new in game development, you need to have the resolve to axe it if it isn’t working. We spent months trying to get those on foot sections to be fun, but couldn’t do it. We should’ve cut our losses and killed them, but that’s easy to say in hindsight.”



» Stilted animations and an awkward camera blight the on-foot gameplay sections of *Rebel Strike*.



While the campaign was disappointing, the new cooperative mode was excellent, due to the fact that it used the missions from *Rogue Leader*.

But why use the old missions rather than the new ones?

“When we did the *Rogue Leader* design document, it had the co-op multiplayer in there but due to time we couldn’t get it done,” Julian recalls. “So partially it happened in *Rebel Strike* as a proof-of-concept that we could push performance so much further that we could run *Rogue Leader* twice, and secondly it was just a blast to work on a multiplayer version of the levels we were familiar with.” This proved to be a major technical undertaking, but one which added a huge amount of value to the game. “Multiplayer brought up all manner of interesting challenges,” says Mike. “Not only did we have to rewrite huge chunks of the code base to add the concept of multiple players, but a lot of the optimisations worked because they assumed there would only be one camera (viewpoint) at any given time, so we had to find new methods to get the performance we wanted.”

Rogue Squadron III: Rebel Strike launched in October 2003 to a critical reception that was still broadly positive, but markedly less so than that of its predecessors. The flight combat and cooperative mode were positively received, as was the inclusion of classic *Star Wars* arcade games, but the on-foot missions were singled out by the majority of critics as the major negative point.

Regardless of the disappointing conclusion to the trilogy, it’s fair to say that Factor 5 and LucasArts created something special with the *Rogue Squadron* series. Few *Star Wars* games have so expertly captured the feeling of making heroic strikes at the Empire, whether they’re recreating the movies or adding to the legend as in *Rogue Squadron*. “The gameplay holds up well. And people mention [*Rogue Squadron*] to me a lot as one of their favorite N64 games, so I’m proud of that,” says Ryan. “We just wanted to capture the excitement we



» Improved explosion effects were one of the key visual upgrades to *Rebel Strike*.

felt as kids watching the space battles and playing with our *Star Wars* toys,” Chris remarks. “[*Rogue Leader*] holds up well,” agrees Mike. “We were a team of passionate fans, we worked hard. Our mantra throughout was that we wanted to make the player feel like they were Luke Skywalker, and I think we did a pretty good job of that.”

But for Julian, the *Rogue Squadron* story is one which remains unfinished. “When we designed our ideal *Star Wars* game, it was a blend of *Rogue Leader* and *Rebel Strike* – in fact it exists as *Star Wars Trilogy: Rogue Squadron* for the Wii,” he explains, referring to an unreleased game that combined the existing games while fixing some features and adding new ones like lightsaber battles. “Both games merged together felt perfect, and of course that was finally realized on the Wii. The Hoth level on the Wii is probably the best *Rogue Squadron* level ever, since it merged all of *Rebel Strike*’s Hoth and *Rogue Leader*’s Hoth into one epic mission.”

“It would be nice to see that game released in some form since it was the ultimate *Rogue Squadron*,” Julian continues. “I am still holding out hope that it will happen, especially because it was also some of the best work of the team.” It’s a tantalising thought to leave us with, and one that leaves us with a new hope that the *Rogue Squadron* series might take flight again in the future. ★



TOMB RAIDER

Few characters achieve iconic status, and Lara Croft ascended to become a superstar. But it takes a lot of hard work to stay relevant over two decades, as Nick Thorpe and Darran Jones learn from the people tasked with bringing Lara to life...

HALL OF HEROES

Everyone we spoke to
about Lara Croft



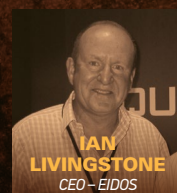
**STUART
ATKINSON**
ARTIST/ANIMATOR –
CORE DESIGN



SHELLEY BLOND
VOICE ACTOR –
LARA CROFT



WILL KERSLAKE
LEAD LIVE DESIGNER –
CRYSTAL DYNAMICS



**IAN
LIVINGSTONE**
CEO – EIDOS



MEAGAN MARIE
COMMUNITY MANAGER –
CRYSTAL DYNAMICS



**NATHAN
MCCREE**
COMPOSER –
CORE DESIGN

TOMB RAIDER

In the mid-Nineties, the videogames industry was short on icons, but there were plenty of characters to go around. You

were hardly a developer if you didn't have your own 'hero' – and Core Design had just spun the kart racer *BC Racers* off from its *Chuck Rock* series. Save for the loose tie of ancient history, that game might not have much to do with *Tomb Raider* but for a single name: Toby Gard.

As a talented young designer, Toby Gard had moved on from *BC Racers* with the vision to create a project unlike anything else at the time, and something that would become truly iconic. *Tomb Raider* was to be a 3D action-adventure game, distinguished by its female protagonist. Initially conceived as a South American adventurer by the name of Laura Cruz, she would eventually become the British aristocrat Lara Croft, an athletic and independent adventurer with a penchant for collecting ancient artefacts. While Lara wasn't



PETER CONNELLY
COMPOSER –
CORE DESIGN



NOAH HUGHES
CREATIVE DIRECTOR –
CRYSTAL DYNAMICS



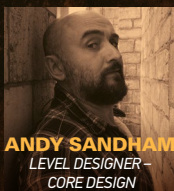
ASH KAPRILOV
OWNER –
TOMB OF ASH



JAMES KENNY
ARTIST – CORE DESIGN



GAVIN RUMMERY
PROGRAMMER –
CORE DESIGN



ANDY SANDHAM
LEVEL DESIGNER –
CORE DESIGN



MURTI SCHOFIELD
WRITER – CORE DESIGN



HEATHER STEVENS
ARTIST/LEVEL DESIGNER –
CORE DESIGN

BRINGING LARA TO LIFE

Shelley Blond on voicing Lara in the very first Tomb Raider game



How did you get the job of voicing Lara Croft?

I was asked to audition for the character after Eidos and Core had been searching for the right voice for quite a few months. I was sent a few sentences from the script, along with a very rough sketch of

Lara, and I recorded them into a cassette recorder and sent it to Core. A few days later I was asked to take part in a conference call with a few people from Eidos and Core, including Nathan McCree, and after performing a few more audition lines was told I had the job. It was wonderful to get the role, knowing they had looked for so long and so hard.

How much information were you given about the character before performing the dialogue?

For the audition I was simply given the rough drawing and told she was a girl with a feel for adventure and 'spoke quite well'. I took that on board and read for the part as I felt she would sound. For the actual job, I was given more detail about her upbringing and background. I was asked to perform her voice in a very plain non-emotive manner and in a 'female Bond' type of way. I would have added more inflection, tone and emotion to my voice but they wanted to keep it how they felt it should sound, which was quite right. My job was to bring their character to life.

Why didn't you reprise the role in the sequels?

I was asked to reprise the role for the second game, as the chemistry worked, the game was so successful and reviews for the voice as well as the actual game were great. But by that time I was contracted for other companies and we couldn't make that work. I did give my permission for them to use all my sound bites from the first game for *Tomb Raider II* and *Tomb Raider III*... like the fighting, falling and 'yes' and 'no'. So I am still in the games. Judith Gibbons voiced the game but it's all Lara's original sound bites.

It's such an honour to be the original voice of such an iconic character. There are so many fans of the games, it has touched so many peoples' lives, had such a global impact and I am honestly thrilled to be part of it all.

» Lara's iconography can be attributed to her appeal for both male and female demographics. She is a hero for everyone.



» The infamous T-Rex encounter, as captured from a nice safe vantage point.

“A real buzz was building around Tomb Raider, but we were still prudent with our forecasts”

Ian Livingstone

► the first female protagonist in games, this was still a bold choice – few games included strong female leads. Dwelling on Lara Croft's qualities as a character, however, diminishes the fact that the choice to make a 3D action-adventure game was also bold. Not only was the project unlike anything else available at the time, the lead platform for the game was the Sega Saturn – a machine that would become well-known for its awkward and non-standard handling of 3D visuals.

“We were definitely trailblazing a lot of what we did on *Tomb Raider*,” says Gavin Rummery, a programmer on the first two *Tomb Raider* games. “When Toby first described what he envisaged on my first day at Core, I wasn't sure it was possible because nothing like it existed.” Of course, had that precedent existed, it wouldn't have been a big deal anyway. “We didn't think about looking at repeating something that had been done before, so had never considered needing other games

for reference,” recalls Heather Stevens, a graphic artist and level designer on the first two games.

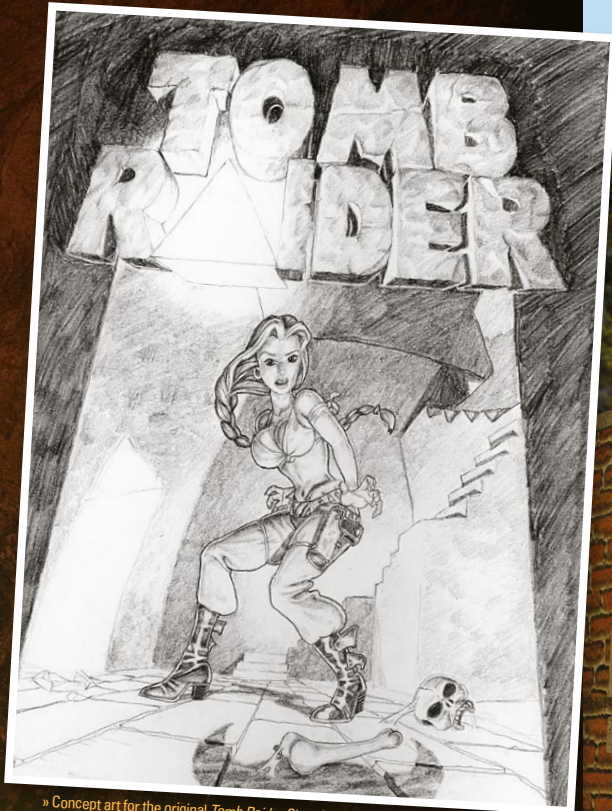
It was an enormous departure from what Core Design had done before, and the team struggled with it. “What appeared the greatest challenge was how on earth we would create the actual environments and get Lara to interact with them,” Gavin recalls. “Heather was attempting to build them directly in 3D Studio which could only edit in wireframe mode, but neither Paul [Douglas, programmer] or I had a clue how we could get a character to interact with freeform environments given the processing constraints of the day.”

“The breakthrough was the decision to build everything on a grid,” continues Gavin. “To me this was the point. *Tomb Raider* became feasible and everything seemed to fall into place. Toby was able to define Lara's moves, Paul could get the control working, and I was able to build a level editor that Neal [Boyd, artist] and Heather could use to build and test the environments far quickly than would've been possible using 3D Studio.”

Getting the sound of the game right was important, and this was a task which fell to Nathan McCree – although given the amount of time he had to so, it might have felt rather more like it had fallen on him. “The first *Tomb Raider* was such a rush. I think I had about three weeks to compose the music. It was mostly a case of, write something and then figure out a way to use it later,” he tells us. “What became apparent during the installation process was that the tunes worked best when placed in specific locations to describe a particular place or feeling at a specific moment in the game. And this gave birth to the idea of location-specific music.”

Nathan wasn't the only one feeling the pressure, as the whole team was battling a very tight deadline. “It





» Concept art for the original *Tomb Raider*. Showing Lara in, unsurprisingly, a tomb.

was tough developing *Tomb Raider* (long days etc.) but very rewarding," Heather confirms. This eventually led to extra staff being drafted in. "I was an animator and model builder working in the room next to the *Tomb Raider* team and also a good friend of Toby Gard," explains Stuart Atkinson, an artist who worked on the earlier *Tomb Raider* games. "He asked if I could help him out with enemy characters, being about four months from the deadline, the pressure was getting pretty serious and his workload was too much. So I jumped at the chance!"

Tomb Raider was released in October 1996 for the Saturn, followed by PlayStation and PC versions in November. It detailed Lara's quest to acquire the Scion Of Atlantis for the mysterious businesswoman Jacqueline Natla. The game was a critical success, and commercial success would follow. But though the team at Core Design was sitting on a hit, it didn't know it. "None of us knew it would be anything like the success it was," says Gavin. "We could tell it was getting favourably received, but it was only when we started seeing the actual sales figures that we realised just how big a success it was." Even the upper management wasn't aware that the game would be enormous. "The preview coverage had been very encouraging. A real buzz was building around *Tomb Raider*, but we were still prudent with our forecasts," says Ian Livingstone, then president and CEO of *Tomb Raider*'s publisher Eidos. "I recall that we put a number in the budget of 100,000 units being sold. Little did we know that the first *Tomb Raider* would go on to sell over seven million units!"

While there's no doubt that the game was a team effort, one man's influence is often cited as a key factor behind the game's success. "Thanks to a very obstinate Toby Gard and his vision of a strong female heroine in a computer game, we can now appreciate the unique Lara Croft," says Heather. "Undoubtedly Lara was a huge aspect in the success of the game and the marketability of the product. She was a character ►





» Although concept art showed Lara's ponytail it wouldn't appear in-game until *Tomb Raider II*.

► that won the hearts of both male and female players. However the game was so much more than the character herself," she continues. "I think the key factor was Toby Gard," Stuart concurs. "It was his vision and he made sure everyone followed it through. He was also lucky with the team he ended up with, not only were they talented, they trusted and believed in him." However, that's not the only factor he credits. "And, of course, how amazing the first game was to play back in the day, it just blew me away."

Unfortunately, Toby Gard would not stick around for the success that followed. Creative differences drove a wedge between him and the management at Core Design, and he would leave the company without getting involved in *Tomb Raider II*, passing up enormous royalties in doing so. Most of the team remained and moved onto the sequel, which had to be ready in less than a year. Surely such a tight deadline was a pain? "Working on the sequel was a natural progression," Heather points out. "We had invested so much time and creativity into *Tomb Raider* that it would have been unthinkable to just walk away from it. It was action stations again for most of the team, and time to get our heads down again."

Externally, Lara Croft was already becoming a crossover star, a fact which brought the success of the first game home to the developers. "On the lead up to the release of *Tomb Raider II*, we had many more press and TV interviews, so things started to hit home for me," Nathan recalls. *The Face* featured a cover story on the character and her popularity. Rhona Mitra was gaining recognition as the 'real life' Lara Croft, and she was already collaborating with Dave Stewart of the Eurythmics on music to be released under Lara's name. This exposure built anticipation for *Tomb* ►

AROUND THE WORLD

Then *Tomb Raider* games have taken place all over the world. How many of the following exotic locations do you remember?



NEVADA
TOMB RAIDER III



NEW YORK CITY
TOMB RAIDER CHRONICLES

ENGLAND

TOMB RAIDER II, III, LEGEND, UNDERWORLD, ANNIVERSARY, RISE OF THE TOMB RAIDER

LOST ISLAND
TOMB RAIDER



MEXICO
TOMB RAIDER: UNDERWORLD



PERU
TOMB RAIDER, TOMB RAIDER: LEGEND



BOLIVIA
TOMB RAIDER: LEGEND



THE DEFINITIVE HISTORY OF: TOMB RAIDER





» Even the caverns were bigger in *Tomb Raider II*, thanks to graphical advances.

“I prototyped Lara riding a quad bike using only the animation editor”

Stuart Atkinson



» *Tomb Raider II* added in vehicles, something that Stuart Atkinson was particularly proud in implementing.

► *Raider II* to a fever pitch, and Sony took advantage by signing an exclusivity deal with Eidos, ensuring that the PlayStation was the only console to receive it.

Back at Core, the team was busy trying to top what had gone before – even if it meant improving on finer details. “I was pleased to get Lara’s ponytail working,” says Gavin. “It had been dropped from the original because it just didn’t work properly with all the acrobatic moves – it was more like she had an electric eel attached to her head that had a life of its own. But on *TRIII* I came up with a way to get it working and was really pleased how natural it looked. The physics were ultra-simple and a complete cheat, but it did the job.”

Other additions were far more substantial. Improvements to the graphics engine allowed for wide open outdoor spaces that hadn’t been possible in the original game, and Lara was no longer restricted to travelling on foot. “Introducing vehicles was my idea, I’m quite proud of that,” says Stuart. “I prototyped Lara riding

a quad bike using only the animation editor – I replaced her run animation and attached a quad bike to her bottom – the in-game result gave you a pretty good idea how well it would work.”

On the audio front, Nathan was able to make improvements as he was more involved in the development process. “With *Tomb Raider II*, I had a little more development time (about two months) and although I wrote twice the number of tunes, there was a plan in my head about how it was going to piece together,” the composer recalls. “I expanded on the themes, establishing new motifs, but mainly focusing on this location-specific idea that had been born in the first game. The implementation improved as I demanded control on how and when each tune would be triggered.”

One of the game’s most memorable moments was actually born of the tight deadline. “The game was supposed to finish after the dragon battle, but it didn’t feel like a satisfying conclusion, so we came up with the idea of having an epilogue,” Gavin explains. “Due to time constraints the idea of reusing Croft Manor was chosen, with just a pitch battle of Lara defending her home. Then my favourite bit – the ‘shower scene’ where we got Lara to shoot the player – that was our response to the enquiries about nude cheats!”

Tomb Raider II was another critical and commercial success, surpassing the sales of the original. Plans were set into motion for *Tomb Raider III*, but this time most of the original team opted to move onto a new project. “Knowing you were leaving a big-seller along with the royalty cheques felt a bit of a silly move,” Stuart recalls, “but our team wanted at least two years to develop



» Ash Kaprielov and several Core Design staff appeared at PLAY Expo’s huge *Tomb Raider* celebration, which was organised by replayevents.com.

Tomb Raider III – to really move it on, but the producers wanted it done in a year. For those who had done that for two consecutive years already it was just too much.”

Luckily, the expansion of the team during *Tomb Raider II* provided new blood to carry the series forward. “I was finishing up creating some (unused) multiplayer levels for *Fighting Force* when I heard they needed FMV help on *Tomb Raider II*, so I offered up my services, as I was starting to see multiplayer arenas in my sleep,” recalls Andy Sandham, who would follow up this involvement with level design from *Tomb Raider III* onwards. “My task on *Tomb Raider II* was to blow up the Great Wall Of China, if I remember. That was my introduction to the time-honoured *Tomb Raider* tradition of the willy-nilly decimation of historical sites and the laissez-faire gunning down of endangered species.”

Another newcomer to the *Tomb Raider III* team was Peter Connelly, who would stick with the series for the rest of the Core Design era. Like many of the newcomers, he was excited to be on the team. “My first real experience [with the series] was playing *Tomb Raider II*,” remembers the musician. “I had bought it for someone for Christmas and we were playing it extensively on Christmas Day evening. What I remember most about this was wishing I was working on such a game. Nine months later, I was working at Core Design.” Though his contribution to the third game was small, Peter would become the series’ main musician from the fourth game onwards.

Tomb Raider III started to branch out into new areas, and particularly more action-oriented gameplay. The addition of sprint button was useful for outrunning enemies, and new enemy AI allowed for the bad guys to call for reinforcements and shut off rooms, necessitating a stealthier approach. Meanwhile, dangerous terrain additions were made including quicksand and water with deadly currents. The other big change was the addition



» The rooftops of London are a dangerous place to be hanging around at night!

of a non-linear structure – while players started in India and finished in Antarctica, adventures in London, Nevada and a South Pacific island could be tackled in any order.

Upon its release in 1998, *Tomb Raider III* didn't fare as well as its predecessors, but remained an high-performing title all the same, shifting well over six million copies – meaning that another sequel was guaranteed for 1999. For Andy, that meant a new opportunity. "When Vicky (scriptwriter on *TRI-III*) jumped ship after *Tomb Raider III*, there was a gap to fill and I jumped into it, with a view to writing 'movie-style' *TR* games."

For story, we'd choose our levels first – for our team, the first and most important part of any *Tomb Raider* game was the 'buying books on ancient civilisations' and phase, to cement ideas that would result in a rough plot that I'd have to shape into something coherent," Andy continues. "I was reminded the other day that the next stage after this would basically be the whole team queuing up at the office scanner, coffee table history books in hand, waiting to digitise our next level texture."

Tomb Raider: The Last Revelation introduced more of Lara Croft's history through a chapter showing a younger version of the protagonist on an early adventure with mentor/rival Werner Von Croy. Though it enjoyed a slightly more positive critical reception than its predecessor, *The Last Revelation* was perhaps the first real indicator that interest in the series was waning – it was the lowest sales tally for a *Tomb Raider* game so far despite the addition of the Dreamcast as a third platform. However, management was concerned about *The Last Revelation* for an entirely different reason.

As the fourth release in four years, it was inevitable that creative fatigue had set in during *Tomb Raider: The*

Last Revelation. However, the way it was expressed was a shock to players around the world. "We all wanted to kill Lara," says Andy. "Looking at Lara's avatar all day every day for two years was about as much as some of us could take. Management were pretty hands off, so for two weeks, we hatched this plan to kill Lara, and followed it through to fruition." Indeed, the game ends with Lara entombed under a collapsed pyramid entrance, a dramatic and perhaps poetic end for the adventurer.

Of course, the team wasn't going to get away with killing the company's golden goose. "By 'fruition' I mean [Jeremy Heath-Smith, Core Design CEO] finding out we had killed her and it was too far gone to reverse it, and taking us into his office and shouting at us," Andy recalls. "We backtracked quickly, but not without paying penance by having to make another game set in all the ropery bits we had cut out of previous games, which became *Tomb Raider Chronicles*." In order to tie these pieces together, *Tomb Raider Chronicles* shook up



» *The Last Revelation* is one of the most tomb-heavy games in the original quintet.

LARA'S BIGGEST FAN

We speak to Ash Kaprielov about his love of all things *Tomb Raider*



What was it about the *Tomb Raider* series that drew you in as a fan?

My teenage years were quite difficult, but *Tomb Raider* provided me an escape. The levels were so vast and challenging that it would take me weeks to finish a game,

weeks where I could completely forget all my problems and explore ancient civilisations instead. When I first got an internet connection I started chatting with like-minded people and, since most of the forums were in English, it let me enhance my language skills. I met many of my best friends because of *Tomb Raider* and Lara gave me the courage to move to the UK on my own.

Tell us a little about your website, *Tomb Of Ash*

When I moved to the UK I decided to help my Russian colleagues at LaraCroft.ru, writing them a number of articles from various Expos. Then I interviewed Andy Sandham, a level designer and script writer for *Tomb Raider 3* to *Chronicles*. The interview was translated into Russian and I realised that I had nowhere to post the original English version of it. I uploaded it onto my personal Tumblr account, received some good feedback and decided to start my own website. I first ran it on my own, but then eventually brought my Croatian friend and fellow *Tomb Raider* fan Tina on to join me as a social media coordinator. [There is also] April and Tatiana, who produce various fan content. We actually helped Crystal Dynamics source interviewees for the *20 Years Of Tomb Raider Book*. Our latest achievement was the co-organising of the largest *Tomb Raider* 20th Anniversary celebration yet, hosted at PLAY Expo.

What's your favourite *Tomb Raider* moment?

My favourite moment happened on 8 October 2016 when Core Design took to the main stage at PLAY Expo. Their realisation that their work is still appreciated 20 years after the first game was out was incredible. I will never forget that day and the emotions that it stirred within me knowing that I helped make that day happen. I have been to many fan gatherings but the PLAY Expo weekend was probably the first time that I felt truly connected with the *Tomb Raider* fandom.



CREATING TOMB RAIDER

A retrospective interview with Toby Gard



Wasn't *Tomb Raider* originally a Saturn exclusive?

Core was in an exclusive deal with Saturn even when [*Tomb Raider*] came out. We were developing the Saturn and PlayStation versions simultaneously, but there was [a] time period that meant that Core wasn't able to bring it out on the PlayStation – it could only have been the Saturn. That was the exclusivity. Actually, it turned out better for PlayStation owners because there were a lot of bugs in the Saturn version. We found that out after it was released, and we managed to fix and tune up the PlayStation version a little bit before it came out, so it gave us a little bit of polish time...

What challenges did you face making *Tomb Raider*?

It was all new to be honest with you, we were only a small team and none of us had done anything like it before. Every day was a new challenge. Obviously the coders there were superb to pull off *Tomb Raider* – both of the main programmers on the title had never even made a game before. It was pretty impressive.

Was Lara originally going to be a man?

When I very, very first pictured the game of *Tomb Raider*, it was from four drawings, and those four drawings were of a dude, an Indiana Jones-style dude, in a 3D world. When I began to write up the first design document, when I was working out exactly what the character design would be, there was a time when we were thinking about being able to choose from more than one. And so I designed a male and a female character. And then I realised that with the level of storytelling – I was going for a cinematic, movie-directed style – we would end up having to do double the amount of cinematic work, and that was somewhat more ambitious than we wanted to do. I'd already designed Lara and this dude, and I liked Lara more than I liked the dude, so she was the winner. That was that.

Did any films influence you?

There was a mixture of influences. One was the John Woo movies – I'd seen *Hard Boiled* and I wanted to get that in, I was so excited about that film – at the time it was just insane. I wanted to have that kind of dual-pistol insanity going on, with leaping and shooting and stuff. The other was *Aeon Flux*. In one of the shorts, she's running around with Uzis, mowing down hundreds of people – and that was pretty exciting, I thought. So for me, it had to be that Lara was a dual-wielding action star, and that became an integral part of the whole costume.

What's the secret of *Tomb Raider*'s success?

Lots of different things, I suppose. It had a really unique character, it had some really memorable moments, it had some pretty clever level design, and it had a good solid platforming mechanic. It was based in the whole history scenario, which I felt was something that was very engaging. And it had a good story.

Interview extract taken from games™ issue 44

► the storytelling structure of the series – instead of a linear narrative focusing on a single adventure, the game was themed around Lara Croft's funeral. Gathered mourners recounted tales of her past adventures. By this point few additions were made to gameplay – Lara gained access to a grappling hook, as well as tightrope walking and the ability to swing from horizontal bars.

However, the *Tomb Raider* engine was beginning to feel very dated, as the yearly release schedule hadn't permitted significant alterations. What's more, the team that had seen fit to kill Lara Croft was still in charge and no happier with the situation. "That lack of enthusiasm showed in the final product," Andy notes with some regret. "The only person on the team that was still happy was Phil, the animator, who spent all day animating Lara being slaughtered in new novel traps and enemy attacks." When *Tomb Raider Chronicles* arrived in 2000, it was to the least enthusiastic critical response so far, and sales were drastically lower than those of *The Last*

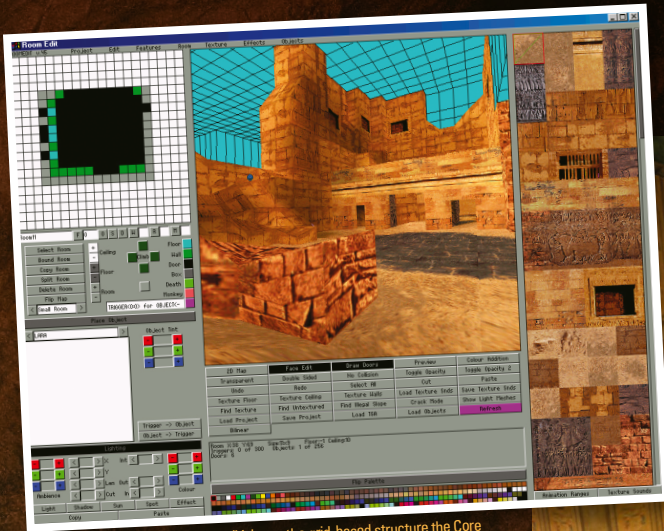
Revelation at just one and a half million copies. With a burnt-out team having pushed out five games in five years, it's fair to say that the original *Tomb Raider* model had been well and truly exhausted.

However, from the outside the series couldn't have seemed to be in a better position. Angelina Jolie had been tapped up to star as Lara Croft in a *Tomb Raider* movie, and there was a new hope for the games around the corner in the form of the PlayStation 2. With new technology, the team would have a chance to revamp the gameplay of the series. Stealth and hand-to-hand combat would play a big part in the new adventure, as would the new playable character, Kurtis Trent.

Along with the new technology came another set of new staff, with a hunger to work on such a huge project. "I was thrilled, daunted, overwhelmed (almost), delighted, panicked, hyper and exhilarated," recalls Murti Schofield, a writer who had joined Core from Psygnosis. "I was also determined to give this opportunity everything I could. This was a writer's dream. El Dorado. The Alchemists' stone. The Grail. The ketchup on the bun of life. So, how did I feel? Determined."

"My first experience of working on *Tomb Raider* was to be sat with a pencil and paper and to be instructed to simply draw out whatever ideas came into my head as long as they were Lara Croft-related," recalls concept artist James Kenny. "I had at that time zero experience of the game, film or television industries and had been recruited by Core Design straight from studying





» This level editor for *Tomb Raider IV* shows the grid-based structure the Core Design games were built on.

animation in Ballyfermot Senior College in Dublin.”

Initially, things seemed to be going well. “As with most games I’ve worked on over the years, there are usually delays and issues that contribute to stalling a release and, as *Angel Of Darkness* wasn’t like the previous *Tomb Raider* games, i.e. they were released exactly one year apart, I wasn’t that phased that things were dragging on,” says Peter. Unfortunately, the combination of a large team, an over-ambitious design and a management structure ill-equipped to deal with the task quickly drove the project off the rails.

“The step up to the PlayStation 2 and the complexity that would engender was not properly envisioned by anyone at Core at that time,” says James. “Also I think there was a desire to change the direction of the games in a narrative and gameplay sense and there was pressure coming from the developments in other gaming franchises.” For Murti, the situation was extraordinary. “There was just so much that went wrong and the pressures were awful; I don’t mean ordinary, standard industry pressures but the sense that the ship was slipping into the maelstrom and no one knew what to do. We knew things weren’t going well. The game wasn’t right. Deadlines kept breaking over our heads and still things were not right.”

After many delays, *Tomb Raider: Angel Of Darkness* arrived in 2003 with much of the intended game design left on the cutting room floor. Despite selling two and a half million copies, it was given a critical kicking and is considered the lowest point in the series. With dissatisfaction rife amongst both fans and shareholders, Eidos took drastic action and removed *Tomb Raider* from Core Design. “As a board of directors, we did not take that decision lightly,” explains Ian. “Core Design



» Ancient foes often wield powers that can barely be distinguished from magic.



» Water areas played a large part in the *Tomb Raider* games, acting as a break from climbing.

“There was just so much that went wrong and the pressures were awful”

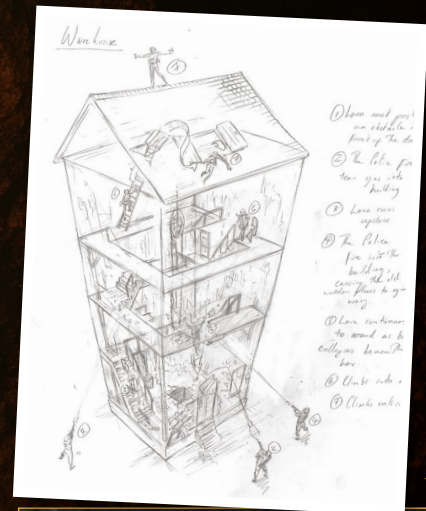
Murti Schofield

had done an incredible job in developing a new title year-on-year from 1996 to 2000. Then along came PS2 and with its new tech challenges which Core Design struggled with for too long. Instead of it being another hit in the series, *Angel Of Darkness* was not far short of a disaster when it came out in 2003. Sales were below expectation and development of *Tomb Raider* was moved to Crystal Dynamics. For a UK company, moving the development of its prized asset from Derby to California was a big decision to make but, as it turned out, absolutely the right one to make.”

History has vindicated the decision – under the care of Crystal Dynamics, the series has returned to form critically and commercially. However, from an outsider’s perspective it seems like a harsh decision, especially as Core Design had only produced one truly bad *Tomb Raider* game. Surely the tens of millions sales it had generated prior entitled Core to another crack of the whip? “Many on the development team at Core had enough. Some were burned out and wanted to work on new games. It was definitely time for change,” Ian responds. “But nobody should ever take away or diminish the contribution that Core Design made in not just creating *Tomb Raider*, but making it an iconic franchise.”

Murti agrees. “If Core had been given another chance would it have been different? Who knows,” he ponders. “It would have required a restructuring of management practices and a shake-up – which seemed unlikely. And with the benefit of hindsight it was time for someone else to take Miss Croft’s future in hand.”

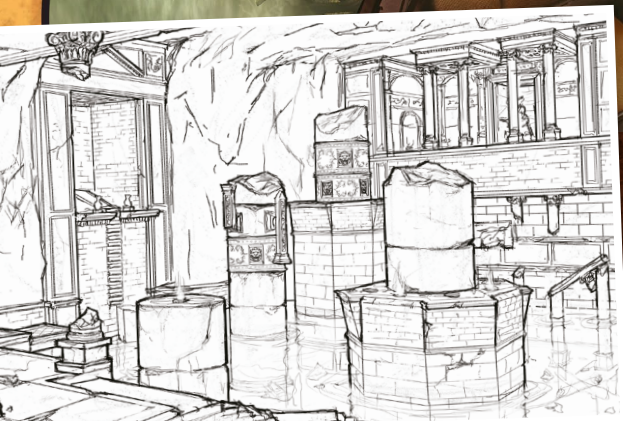
Over at Crystal Dynamics, the team had been working on the well-regarded *Legacy Of Kain 3D*



» The concept art for *Angel Of Darkness* shows a stark absence of any actual tombs.



» Though planned as the first part of a trilogy, *Angel Of Darkness* marked the end of Core’s *Tomb Raider* timeline.



» The concept art for *Anniversary* shows a new aesthetic design applied to the older ideas from Core Design.

“The dual pistols are part of Lara’s iconography, but focused on agility rather than brute force”

Noah Hughes

► action-adventure games for some time, but getting the *Tomb Raider* job was a big shock. “For us, there was a sense of, ‘Oh my gosh!’ *Tomb Raider* was such a big franchise with so many fans – if we want to take something like that on, we’d have to do it so right, so it felt very much like a high-stakes proposition” recalls Noah Hughes, creative director at Crystal Dynamics. “But it came up more as an opportunity, with Eidos saying, ‘Hey, would you guys be interested in working with this character?’ From that perspective it was exciting, as it fit comfortably with our desire to create experiences that blended a lot of stuff – environmental exploration, combat and puzzle-solving.”

In developing *Tomb Raider: Legend*, the first game of the Crystal Dynamics era, it was important for the team to establish which aspects of the existing games they wished to retain. “Lara’s intellect and puzzle-solving, we wanted to keep both of those,” Noah offers as an example. “Additionally we felt that traversal and exploration were important, these platforming elements – how could we provide a traversal toolset to make the world a jungle gym? And, of course, the sense that

around each corner there might be a surprise, even the less noticeable corners could hold a secret. Also a combat system of sorts, the dual pistols are part of Lara’s iconography, but focused on agility rather than a brute-force flavour of combat.” There was one more significant element that the team homed in on, too. “We called it ‘flair’ at the time – things like the handstand, so you could express yourself as a character with moves that weren’t critical to progression.”

During the *Tomb Raider: Legend* era, Meagan Marie was just a fan of *Tomb Raider*, but today she is Crystal Dynamics’ community manager for *Tomb Raider* and the author of the official history guide, *20 Years Of Tomb Raider*, giving a unique perspective on the development of the series. “I love Keeley Hawes [as Lara] especially, I love how quippy and sarcastic she was – she might be one of my favourite voice actresses,” she notes. “I also enjoyed the fluidity in combat, the acrobatics – that’s something that Crystal Dynamics pushed as a way to differentiate itself from Core and leave its mark on the franchise. Moving away from the grid-based movement and moving towards very fluid traversal, fluid combat, and that was something I remember being very impressed with.”

In order to make sure the team got things right, Toby Gard was brought into the fold as a consultant. “It was great to have Toby because he was so intimate with her design, and it gave us the ability to be a bit more bold as

we explored different options, but we had insight as to where we were losing that core DNA,” Noah explains. “So from a character design perspective he was a great resource, and he became very involved in the story – I’m not sure if he has a writing credit, but I know he and Eric Lindstrom worked closely together. We were trying to bridge two canons, the Core games and the movies which had gained popularity, so it was another case where having Toby’s insight into what was ‘evolving’ versus what was ‘breaking’ was important. Even to this day I’m grateful for having that overlap with Toby, because it gave us insight and the confidence to find our way without completely copying and pasting.”

The results were an immediate vindication of the decision to go with Crystal Dynamics. The critical reception and sales of *Tomb Raider: Legend* were a marked improvement over the last couple of games, with four-and-a-half-million copies sold. That success ensured that two follow-up titles went into production, and Crystal Dynamics began to focus on the past, present and future of *Tomb Raider*. Although it didn’t seem necessary at the time, Lara Croft’s reinvention was going to become important.

That’s something that the team at Crystal Dynamics recognised a lot earlier than most people realise,” reveals Meagan. “After finishing *Legend* the team split, and a small team took *Tomb Raider: Anniversary* and another took *Tomb Raider: Underworld*, and started working on that, but there was also a small group that was two

BY THE NUMBERS

The sales and Metacritic scores from the main series

TOMB RAIDER 1996



SALES: **7.5 MILLION**

SCORE: **90 %**

TOMB RAIDER II 1997



SALES: **8 MILLION**

SCORE: **83 %**

TOMB RAIDER III 1998



SALES: **6.5 MILLION**

SCORE: **78 %**

TOMB RAIDER: THE LAST REVELATION 1999



SALES: **5 MILLION**

SCORE: **79 %**

TOMB RAIDER CHRONICLES 2000



SALES: **1.5 MILLION**

SCORE: **70 %**

TOMB RAIDER: ANGEL OF DARKNESS 2003



SALES: **2.5 MILLION**

SCORE: **56 %**

TOMB RAIDER: LEGEND 2006



SALES: **4.5 MILLION**

SCORE: **82 %**

TOMB RAIDER: ANNIVERSARY 2007



SALES: **1.3 MILLION**

SCORE: **81 %**

TOMB RAIDER: UNDERWORLD 2009



SALES: **2.6 MILLION**

SCORE: **76 %**

TOMB RAIDER 2013



SALES: **8.5 MILLION**

SCORE: **86 %**

RISE OF THE TOMB RAIDER 2015



SALES: **1 MILLION (SO FAR)**

SCORE: **87 %**

people for a couple of years who sat and ideated the future of the franchise, Jason Botta and Tim Longo, before even entering preproduction. They knew that after *Underworld*, which would be considered the end of a trilogy, that something major needed to be done. They recognised after a while of exploration that an origin story made the most sense, and that letting the players see those moments where Lara was forged into the *Tomb Raider* would make her more relatable."

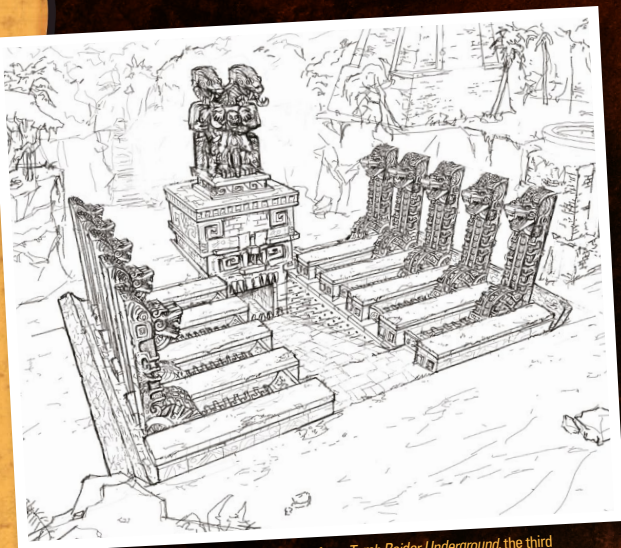
» Lara's overall design was overhauled for the first Crystal Dynamics game.

Of course, this reboot was many years away, and the two other projects would arrive sooner. The first of these was *Tomb Raider: Anniversary*. This was in competition with Core Design's final attempt to design a *Tomb Raider* game along a similar premise, though neither team necessarily knew that the other was in the running. Where Core had focused on the PSP, Crystal Dynamics had a multi-platform strategy that ultimately got the nod from the publisher. The resulting game was a loose remake of the original *Tomb Raider* in the new style. However, despite strong critical performance, good reviews didn't transfer into exceptional sales and it remains the series' commercial low point.

For the larger team, *Tomb Raider: Underworld* was Lara Croft's first step into another new generation, this team targeting the Xbox 360 and PlayStation 3 as lead platforms. "One of the things we did with *Underworld* was that we ended up pushing the technology," recalls Noah. "We had full



» Cinematic scenes were just as important to the Crystal Dynamics games as Core Design's efforts.



» Here's a piece of early concept art taken from *Tomb Raider Underground*, the third game in the series Crystal Dynamics worked on.

► motion-capture actors rather than animation, which we hadn't done in the past, but we ended up with a similar moveset. But in some ways, the gameplay didn't move as far forward as the technology did." Indeed, *Tomb Raider: Underworld* did better upon its release in 2008 than *Anniversary* had managed, but it still didn't live up to the critical or commercial performance of *Tomb Raider: Legend*. Fortunately, the aforementioned foresight of the team meant that new plans had been laid for a reboot.

"We wanted to make sure we weren't falling into a 'myth of the week' pattern – we wanted to make sure our stories were character defining and not just adventures to go on," recalls Noah. "We had also gotten feedback that Lara as a character didn't feel fresh to people, so there was a sense that there could be audience fatigue or a lack of relevance to her as a character, so we took the goal of evolving gameplay and invigorating her character story, but also making sure that on top of all of that, we were recreating a relationship between the character and the audience."

For the first time, we saw Lara Croft not as an adventurer, but as a newcomer to exploration whose experiences would test her very will to survive. "Part of the unrelatability of Lara was that because she had infinite money and was so skilled, of course she was going to win. We felt that we had to place her in a situation where she had to earn her success, and isolate her from the support that she had, to make you believe that she could lose a battle." This led to the introduction of survival mechanics, as well as character development through an experience system.

The reboot, simply named *Tomb Raider*, managed to take cues from popular action-adventure games, like the *Uncharted* series, while retaining the feel of a 'Lara Croft' adventure. The approach worked well, as the game earned a fantastic reception – the reboot became the bestselling game in the series, with over eight-and-a-half million copies sold to date.

A follow-up was inevitable, and the pressure was on following the previous game's high sales. "It's always terrifying to have that amount of success, and we wanted to make sure it wasn't a fluke," Noah confides. "We looked at it as a challenge of how we figure out how to improve on that." *Rise Of The Tomb Raider* charts Lara Croft's growth in confidence following the events of the reboot. "In *Tomb Raider* you look at Lara's transition from being an explorer interested in the world to someone forced to survive," notes Will Kerslake, lead designer at Crystal Dynamics. "In *Rise* we continue that process, but we also see her choose to go on an adventure, so her character continues to evolve."

One of the things that the team was keenly aware of was the need to include more tombs for players to explore. "We did fill [the setting] with history," Noah



» Croft Manor is burning! What has caused Lara's home to end up in such a state?



» Combat now typically takes place using an over-the-shoulder perspective, as is common today.

LOVING LARA

We asked you which iteration of Lara Croft was your favourite





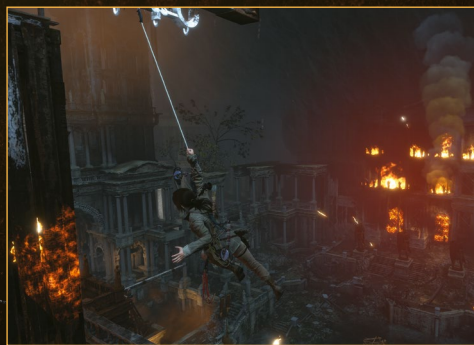
» Production art showing off the parachute sequence from Crystal Dynamics' 2013 *Tomb Raider* reboot.

recalls of the 2013 game, "but those layers were, for example, World War II, so they told stories a week before Lara got there, 50 years before Lara got there, and hundreds of years before she got there. But what we found was that because they weren't ancient places with ancient secrets, they weren't scratching that itch entirely." *Rise Of The Tomb Raider* initially launched on Xbox One, Xbox 360 and PC in 2015, and has recently launched on PlayStation 4, to a very positive critical reception that narrowly edges that of the 2013 reboot.

In many ways, Lara Croft's transformation into a survivalist is a fine way to represent *Tomb Raider*'s journey. From a starting point of fame and fortune, the series has had to adapt to survive against a backdrop of sweeping changes in game design and consumer tastes, as well as the occasional misfortune. Against all of that, the people behind *Tomb Raider* have reinvented it over the course of two decades to remain one of the world's most beloved brands, and Lara Croft stands alone as the icon representing that monumental effort.

Indeed, the future looks bright – the Crystal Dynamics team won't speak of any future plans just yet, but with audiences still discovering *Rise Of The Tomb Raider*, an ongoing comic series and a new movie in the works, it's fair to say that Lara Croft is perhaps just as popular as she ever was. "Lara has transcended gaming in a way that I think no other character has – because of the movies, because she was considered a virtual model for a while – so I think she does hold a unique place in gaming history that I don't know if any other character could compete with," concludes Meagan – and it's very hard to disagree with her. ✨

Special thanks to Ian Dickson, Ash Kaprielov, Alex Verrey and the organisers at replayevents.com for making this article possible.



» *Rise Of The Tomb Raider* is one of the first games to benefit from the additional power of the PS4 Pro.



THE MAKING OF
FINAL FANTASY XII



» You spend an extortionate amount of time in the city of Rabanastre at the beginning of *Final Fantasy XII*.



YEARS IN THE MAKING, THIS PS2 GAME WAS A TOTAL REINVENTION OF THE RPG SERIES. NOW, AS IT RETURNS TO MODERN CONSOLES IN HD, SAMUEL ROBERTS SPEAKS TO SQUARE ENIX ABOUT CREATING THIS DARING CLASSIC

Final Fantasy is well known for throwing out its characters and worlds between entries and starting again. To an outsider, it might look like they're just swapping one set of melodramatic, spiky-haired and buckle-clad teenagers for another, but this is far from the only thing that changes in this RPG series. From 1988's *Final Fantasy II* onwards, Squaresoft would reinvent the underlying systems of the combat and character progression in every sequel. Yet it would still retain a very traditional turn-based battle system right up until *Final Fantasy X* on PS2 – a predictable sequence of random encounters, an iconic victory theme and some form of levelling up. For a long time, all of this seemed resistant to change.



» Vaan and Penelo are your typical 'fish-out-of-water' protagonists who we've seen countless times before.

Final Fantasy XII was the bravest game released in the series. It jettisoned turn-based combat for a real-time system that had no random encounters. Enemies were instead spread across sprawling fields, and the transition between combat and exploration was seamless. Using a smart new system called Gambits, you could program your characters to automatically execute perfect party strategies, telling them exactly when to attack, heal or cast a spell. Even by the standards of a series built on reinventing itself, it was radical.

FFXII came from the lineage of the PSone's *Final Fantasy Tactics* and *Vagrant Story*, sharing their setting of Ivalice, as well as their character designer (Akihiko Yoshida) and game director (Yasumi Matsuno). Several years into a long, five-year-plus development cycle, Matsuno dropped out of *FFXII* reportedly due to health concerns. While much of the story surrounding *Final Fantasy XII*'s creation became about Matsuno's departure, he was joined as codirector of the project by long-time *Final Fantasy* battle design mastermind Hiroyuki Ito. This meant the vision of the game didn't change too much when Matsuno left.

"We had many experienced development staff in the team, such



» Random encounters were done away with for *Final Fantasy XII*. Instead, enemies patrolled the world.

as Hiroyuki Ito, who was in charge of many of the battle designs for previous numbered *Final Fantasy* titles, and had a clear vision of what we had to do up to the game's launch, so the development of the game or the overall vision was not really affected," says *FFXII*'s project manager, Hiroaki Kato.

It's previously been reported that after Matsuno departed the project, the development team was restructured, but Kato denies this was the case. The project was extensively delayed from a targeted summer 2004 release date, eventually reaching Japan in May 2006 – but this was due to the ambition behind the project rather than his leaving. "That reorganisation of the development team did not actually happen, so no differences in the process arose from this," Kato says. "The biggest challenge in *Final* ►

► *Final Fantasy XII* was transitioning from the menu-based battle system separated from the exploration in previous *Final Fantasy* titles, to seamless, real-time battles using the Gambit system. We also added in a great many more elements for replay value, such as the bounty hunts, so we needed to adjust and balance out the game itself and the battle system, and that is what we needed the time for.”

The Gambit system lets players choose their abilities, and when to execute them. You can set your characters to automatically attack enemies on less than 50 per cent health, for example, or to heal allies who are on less than 30 per cent health – then you can prioritise these commands to achieve the best results. The fighting plays out automatically, but you can also manually select moves if needed. The Gambits start as simply as characters attacking the enemies who are nearest to them, though it’s later made complicated

by many more abilities, customisable conditions and additional Gambit slots. It’s very basic programming, but it’s also more complex than anything *Final Fantasy* had challenged players with before at that time.

Depending on the player, with their individual tastes and preferences, some of them may feel *Final Fantasy XII*’s game system is too complicated,” Kato says.

“However, from a development point of view, rather than seeing it as complicated, we feel that these different opinions come from how well different players can get used to the new systems that have been implemented,” he continues. “When you look at current-generation games, there are many games released with an open-world setting and real-time battles, where the character development is deep and players can really enjoy the



» The transition from freely wandering around into battles is seamless.



VAAN

■ *FFXII*’s de facto main character, although he’s a real bore. Vaan lives on the streets of Rabanastre, and gets pulled into the battle against the Archadian Empire, the war having claimed the life of his brother, Eks.



» *FFXII*’s visual style still looks great today, a fantastic mix of sci-fi and traditional fantasy.

**“I RECOGNISE
FFXII AS A
GAME THAT
HAS DEPTH
AND THAT
LETS PLAYERS
ENJOY MANY
PLAYING
STYLES”**

Hiroaki Kato

PENELO

■ Vaan’s childhood friend and marginally more interesting than him, she gets dragged into the war as well. Penelo dreams of becoming a dancer, and her Quickening attacks – *FFXII*’s equivalent of Limit Breaks – reflect that.

exploration. I feel that the players have gotten used to playing these kind of games, so from that perspective I don’t think *Final Fantasy XII* is a complicated game. I recognise *Final Fantasy XII* as a game that has depth and that lets players enjoy many playing styles.”

He’s not wrong – that flexibility and strategy is why *Final Fantasy XII* is so exciting. The Gambit system is coupled to the License Board, which lets players unlock the new abilities they acquire throughout the world, as well as powerful attacks and summons. It is a little trickier to grasp than something like, say, *Final Fantasy X*, where all that’s required to use an ability is to unlock it, then select it in battle. But the nature of Gambits means the player gets the pleasure of building a sequence of intricate strategies, then watching them play out. There’s far more tactical scope to it than mainline *Final Fantasy* typically offers.

With no random battles, the continuous cycle of fighting and exploring offers a very different pace to previous games, where battles are famously heightened with dramatic music and punctuated with the aforementioned victory theme. This only plays infrequently in *Final Fantasy XII*. You can chain combos of enemies to obtain better loot, and take part in bounty hunts for specific monsters. What this seamless design does is create a more tangible world, and the





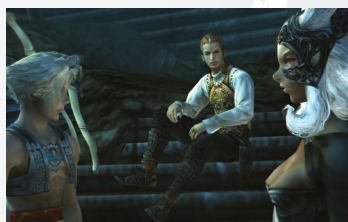
» The world of Ivalice is large – so large, in fact, that it has its own universe of games.

sense of a functioning ecosystem between its wildlife.

"*Final Fantasy XII* was a title where we committed to really building up the world of Ivalice," Kato says. "While we were setting out the climate, cultures, races and the state of affairs of Ivalice, it seemed that implementing the ecosystem of the monsters was the next natural step. The fact that many players who have just started playing *Final Fantasy XII* will accidentally attack the Wild Saurian in the Dalmasca Estersand (it's a high-level monster that is not hostile towards the player) and get defeated, leading to [a] game over, is kind of amusing." Most players will probably remember that giant patrolling dinosaur from the game's opening hours – it's intimidating to look at, but by leaving you alone, it's the world's way of telling you that not everything in *FFXII* is out to kill you.

While Ivalice is divided into too many truncated land-masses to feel truly open-world in the way that something like *Skyrim* does now, it's leagues ahead of the small pockets of towns and pared-down world maps seen in previous *Final Fantasy* games. The architecture of towns in *FFXII* is dense, and shops are filled with objects. Ivalice is portrayed in a complete-feeling way.

This setting had previously appeared in several other games created by



» Balthier and Fran remind us of Han and Chewie... only they've been kicked through JRPG Design 101.

ASHE

■ The heir to the kingdom of Dalmasca, Ashe operates undercover after her husband, Rasler, is murdered, and her kingdom is overthrown by the Archadian empire. Her journey is about taking the land back.



» The License Board was thrown away for a proper Job system in *FFXII's* rereleases.

Matsuno, but this was our most comprehensive look at Ivalice yet. "At its core, *Final Fantasy Tactics* had a 'miniature garden'-like field where the 2D characters battled in a turn-based system, while *Final Fantasy XII* was reproducing Ivalice's environments in 360 degrees with real-time movement and battle progression. So you could say it is only natural that *Final Fantasy XII* required a greater density of information in the art." Being fully 3D makes a huge difference, and more in line with the RPGs we're used to today – you could spin the camera around and enjoy the detail of the world for the first time. It's helped the game age incredibly well.

FFXII's combat and exploration offsets some of the game's weaknesses, like its thoroughly boring protagonist, Vaan, and an overplayed, dry story of a resistance group ousting an occupying evil empire. Your hero is overshadowed by the cast that surrounds him – including rightful heir to the Dalmaskan throne, Ashe, and Han Solo-esque sky pirate Balthier. ▶

THE IVALICE ALLIANCE

The games that share *Final Fantasy XII's* world

FINAL FANTASY TACTICS

■ This PSone tactical RPG was the first game set in Ivalice, as envisioned by Yasumi Matsuno, although here it's represented by some simple isometric backgrounds. The original *Tactics* features a deep job system, as well as a cameo from *FFVII's* Cloud. It was later rereleased as *Final Fantasy Tactics: War Of The Lions* on PSP.



VAGRANT STORY

■ A true cult classic, *Vagrant Story* is an RPG with puzzle elements thrown in, too, as well as specific targeting of enemy body parts, giving it a bit of a dungeon crawler feel. It's a more complicated game than *FFXII*, but no less beloved. *Vagrant Story's* character designs are unmistakably the work of Akihiko Yoshida as well.



FINAL FANTASY TACTICS ADVANCE

■ A cutesy-looking (but no less hardcore) tactical RPG from Square, *FF Tactics Advance* is instead set in an Ivalice imagined by children, though many of the same elements recur, like its species and rule-enforcing Judges. Some *Retro Gamer* trivia about *FF Tactics Advance*: editor Darran Jones played this for hundreds of hours on GBA while lying down after injuring his back in the early Noughties.



FINAL FANTASY XII: REVENANT WINGS

■ The second time *Final Fantasy* has received a direct sequel, after *FFX-2*, *Revenant Wings* is set after *XII* but looks and feels very different. This isometric RPG works in real time, like its predecessor, but requires more direct input from the player, so can get slightly busy on the DS's tiny screen. It'd be a better fit for tablets or PC.



FINAL FANTASY TACTICS A2: GRIMOIRE OF THE RIFT

■ As part of the *Ivalice Alliance* sequence of games, the setting was revisited yet again in this sequel to the GBA game, which retains its in-depth job system and tactical combat but with a few tweaks. This was the last *FF Tactics* game. It's long overdue a revival at this point.



CRYSTAL DEFENDERS

■ This tower defence/RPG fusion came out near the end of the Noughties, at the height of the TD genre's popularity, and was released on every console from the previous generation, as well as smartphones. It's no one's favourite *FF* spin-off, though, and other games in this list offer far more comprehensive visions of Ivalice.



FINAL FANTASY XIV: STORMBLOOD

■ Technically not set in Ivalice, this well-loved MMO's recent expansion will feature a 24-person raid called Return to Ivalice, which will explore that world once with creative oversight from Yasumi Matsuno. *FFXIV* has built up a reputation as a great fan-service MMO – this can only add to that.





BALTHIER

■ What if Han Solo was British, and he flew a sweet airship instead of the Millennium Falcon? This is the question asked by the existence of sky pirate Balthier, who's clearly the most entertaining and well-drawn character out of XII's fairly dry cast.

FRAN

■ And what if Chewbacca was an absurdly dressed bunny lady? Fran is Balthier's partner on the Strahl. She's a Viera, a kind of Amazonian rabbit-eared species, though she's considered an outcast by her people now.

► There's also the memorably weary wanted man Basch, alongside Vaan's slightly-less-dull-friend Penelo. Balthier's partner, the rabbit-like member of the Viera species, the ludicrously dressed Fran, helps make Ivalice feel like a varied backdrop with a deep, pre-existing lore.

All of this is lifted by a localisation job that's significantly better than that seen in *Final Fantasy X*.

The drama is professionally constructed, one-liners land well and the cast is memorably varied in nationality. It doesn't sound like bad anime, basically, and that makes a huge difference. "I think *Final Fantasy X*'s voice acting was good as well," says Kato when we point out criticism of the game. "The reason *Final Fantasy XII* got great reviews was because we learned from our experiences of doing the voice acting on *Final Fantasy X*. I mean, *Final Fantasy X* was the first ever numbered *Final Fantasy* title that implemented voice acting! We had more experience in development on the PlayStation 2 hardware, so we were able to create smoother character expressions with voices, and the localisation staff that were working on this game were excellent. I think another big point was that we used different voice actors with different accents (such as American



English, British English, Latin American English and Northern European English) depending on the character's origin and race, to give the game more realism."

The Viera have Icelandic accents, for example, while the decision to make the Archadian Empire British and Dalmascans American was borrowed straight from *Star Wars*, according to a *US Gamer* interview with translator Alexander O Smith and casting director Jack Fletcher. That said, the story generally has a bit of *Star Wars* feel, with its big-dreaming protagonist, and obvious analogues to Princess Leia and Han Solo in Ashe and Balthier respectively – particularly as the latter pilots a cool airship.

BATTLE SYSTEMS

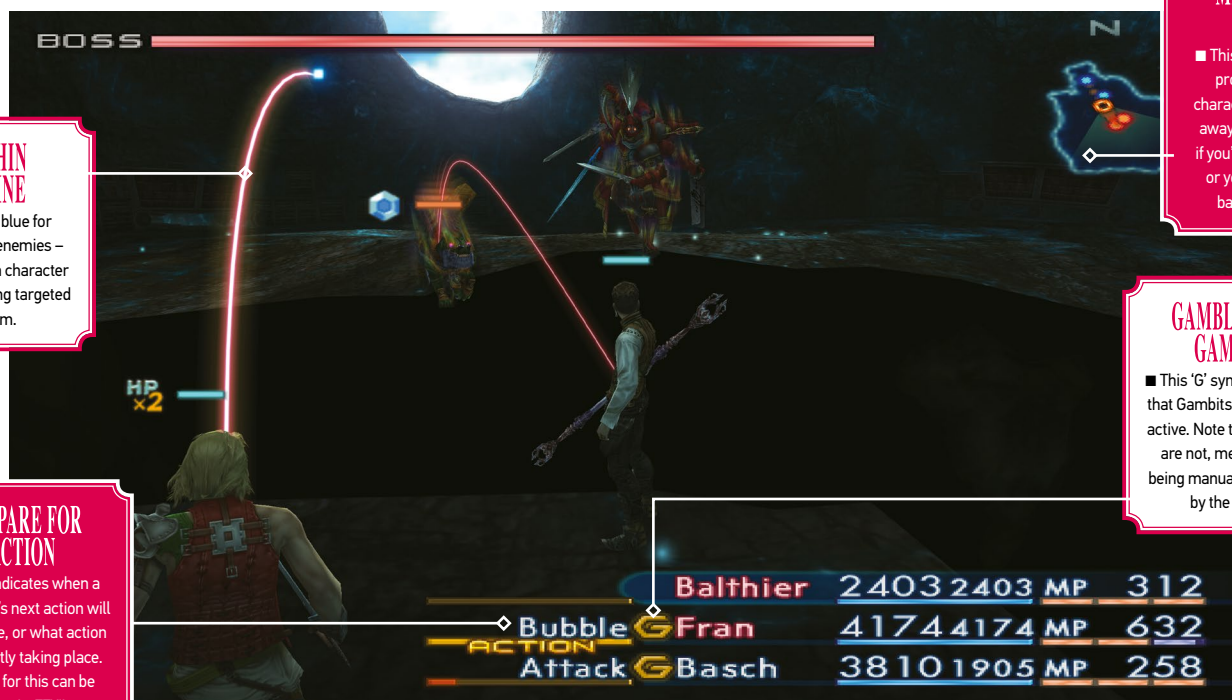
Your guide to fighting Square's 12th fantasy

THE THIN RED LINE

■ This line – blue for allies, red for enemies – indicates which character is currently being targeted by whom.

PREPARE FOR ACTION

■ This indicates when a character's next action will take place, or what action is currently taking place. Waiting for this can be tense in *FFXIII*.



MAPPED FOR SUCCESS

■ This shows enemies' proximity to your characters. You can run away from opponents if you're underpowered or your Gambits are badly organised.

GAMBLING ON GAMBITS

■ This 'G' symbol indicates that Gambits are currently active. Note that Balthier's are not, meaning he is being manually controlled by the player.



Rather than being inspired by George Lucas' space opera, though, Kato instead suggests they were both tapping into similarly pervasive staples of popular fiction. "We weren't influenced by *Star Wars* (but personally, *Star Wars* is one of my most favourite films!). *Final Fantasy XII* has what you might call quite 'orthodox' archetypal characters and story, so we were developing it with that in mind. I think *Star Wars* was also created with an orthodox, archetypal storyline and characters, so some players may perceive that we were influenced by that. People often ask if *Star Wars* was influenced by this work or that too, but when trying to create an archetypal, orthodox story it is the same kinds of easily recognisable themes and content that will appeal to viewers or players, so they may well confuse the fact they are easy to understand with having seen them somewhere else before."

Final Fantasy XII returned in July with *The Zodiac Age*, a PS4 HD reissue that's built on the International Job System version only released in Japan on PlayStation 2. It's not quite

the same game as the original, with the License Board traded for a dedicated job progression system, allowing for more meaningful differences between each of the party members. In this version, you



» If you missed out of *FFXII*, a remaster entitled *The Zodiac Age* is now available to play on PS4.



» Like every JRPG, many NPCs deal out superfluous dialogue.

"WE NOT ONLY JUST MADE IT HD, WE IMPLEMENTED NEW GAMEPLAY SYSTEMS AND IMPROVED THE GAME VASTLY"

Hiroaki Kato

can assign two jobs to your characters for more flexibility. There's also an autosave function this time around, a minimap and a high-speed mode to make those battles go by quickly, alongside other tweaks.

The goal isn't to simplify this RPG, just to give players more of a chance to understand its systems. *Final Fantasy XII* throws players in at the deep end, and clearly critics didn't mind at the time, but opening the game up to more people is no bad thing. It's hard to dispute that the main attraction of this reissue is seeing Ivalice and its characters in HD, though. It's worth remembering that *Final Fantasy XII* came out after *The Elder Scrolls IV: Oblivion* – this was one of the PS2's last big games. Like Clover Studio's *Okami*, it showed how much potential was still left in the hardware at the time.

"*Final Fantasy XII* was a title that was loved by many players, and we heard many voices from fans asking to create a high-definition version," Kato says. "We not only just made it high-definition, we implemented new gameplay systems and improved the game vastly, so I feel the players can enjoy a new playing experience in *Final Fantasy XII*. In relation to the art, we built the original game pushing the very limits of the PlayStation 2, so when looked at in hindsight from the current generation, it may well appear to have been out of its time. I feel that because we were able to create it like that, it made it perfect to convert into a high-quality, high-definition game."

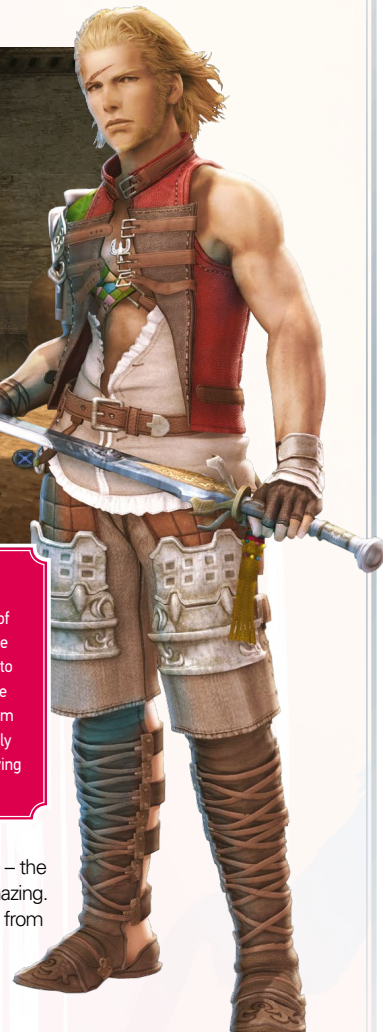
Akihiko Yoshida's character designs still look fantastic today, with an almost painterly style to the 3D models, particularly around the eyes. This stops the game from dating quite as fast as

BASCH

■ Blamed for the murder of the king of Dalmasca at the start of *FFXII*, Basch seeks to clear his name. Early in the game, your party breaks him out of jail, after he's wrongly declared dead by the occupying Archadian forces.

some older 3D games do – the translation of the art is amazing. "I think that effect comes from how hard we worked on creating the characters to look like the original Akihiko Yoshida drawings are actually moving," Kato says. "In *Final Fantasy XII The Zodiac Age*, we have been able to improve the visual depictions that were limited by the PlayStation 2 hardware even further. I heard they had the new visuals shown to Mr Yoshida as well, and carried out the improvements based on the original art with his supervision, so I hope the fans can enjoy that."

FFXII marked the last time the long-running RPG series was truly ahead of the curve, and it warrants such a celebration. The series' great strength, more so than creating grand stories and iconic characters that appeal to young people, is in brilliantly designed and complex battle systems that are presented simply to the player. The developers wanted to create a new version of that in a well-realised world, and they undoubtedly succeeded. "Honestly, that intention was so strong that we don't really have a feeling that we left a legacy or anything like that," Kato says. "Personally, I really like open-world games with seamless, real-time battles, so seeing games with that kind of system being released since *Final Fantasy XII* makes me really happy." *



SUBSCRIBE AND SAVE UP TO 74%

Every issue of your subscription, delivered direct to your door. Print & digital editions available.

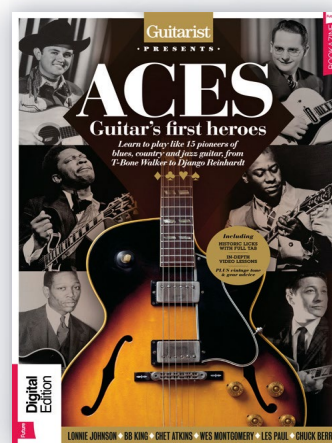
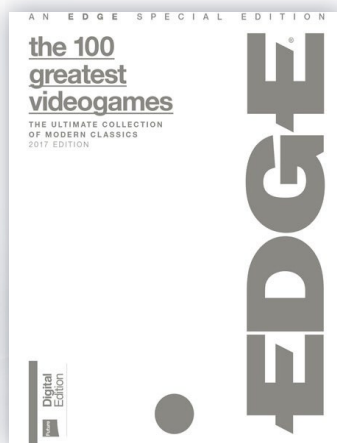


NEAT STORAGE

Store up to 13 issues of your magazine subscription in a coordinating slip case or ring binder.

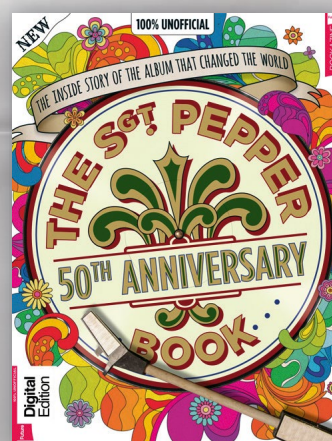
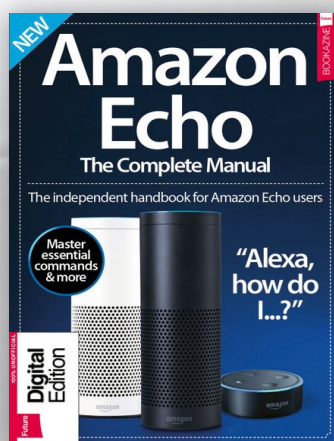
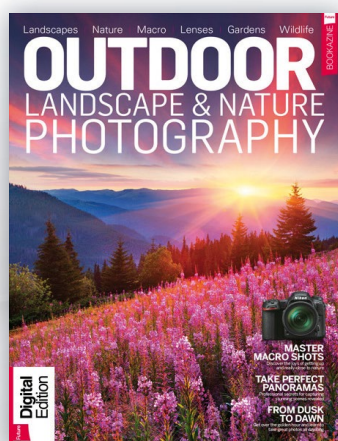


myfavouritemagazines.co.uk



DISCOVER MORE GREAT GUIDES & SPECIALS

From photography to music and technology to field sports, there's something for everyone.



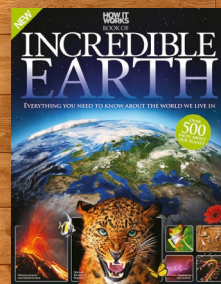
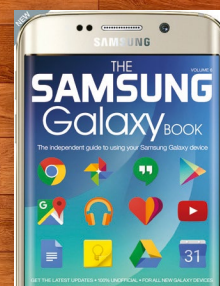
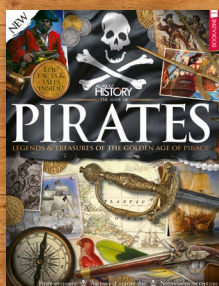
Our magazines and binders make perfect gifts too. And don't worry if you're not quite sure which titles they'll enjoy the most because we have a great choice of gift vouchers available to buy.



✓ No hidden costs 🚚 Shipping included in all prices 🌐 We deliver to over 100 countries 🔒 Secure online payment

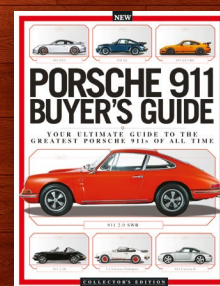
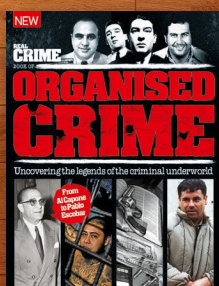
Future myfavouritemagazines
Official Magazine Subscription Store

myfavouritemagazines.co.uk



Discover another of our great bookazines

From science and history to technology and crafts, there are dozens of Future bookazines to suit all tastes



Get great savings when you buy direct from us



1000s of great titles, many not available anywhere else



World-wide delivery and super-safe ordering

Future

www.myfavouritemagazines.co.uk
Magazines, back issues & bookazines.

DISCOVER THE GOLDEN AGE OF GAMING

AMSTRAD | COMMODORE | SEGA | NINTENDO | ATARI | SINCLAIR | APPLE | SONY | COIN-OP | MOBILE

retro GAMER

ANNUAL



CLASSIC GAMES

- SUPER MARIO KART
- DONKEY KONG
- CHASE H.Q.



IN-DEPTH FEATURES

- GAUNTLET II
- VIRTUA FIGHTER
- ROAD RASH TRILOGY



HARDWARE HEAVEN

- COMMODORE PET
- PC ENGINE
- AMIGA 500



BIG FRANCHISES

- POKEMON
- TOMB RAIDER
- FINAL FANTASY



Future

BOOKAZINE